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VOLUME 100 SEPTEMBER, 1960 NUMBER 9

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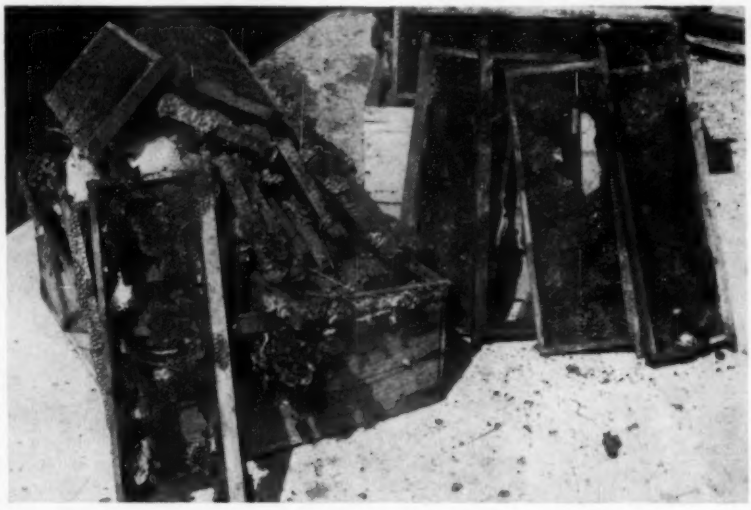

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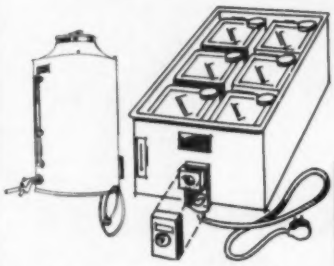

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HAMILTON, ILLINOIS

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The Wedding of Bee and Flower
• Pollination •

Pollination By Honey Bees Up To Now

by Roy A. Grout

In 1950, the American Bee Journal featured a half century of progress in various phases of beekeeping throughout the twelve issues of that year. It was then that I wrote a comprehensive article entitled "Pollination—A Half Century Review," which appeared in the May issue. In the June issue of 1950, another article appeared under my name entitled, "Seed or Honey Production— Which?" In the conclusion of both articles, it was pointed out that the nation was faced with a serious legume shortage that could only be overcome by increased honey-bee pollination. It further stated this was a golden opportunity to make the pollination services of our bees pay more of the cost of beekeeping—to become a prosperous industry, in fact,—and to attain a high position of importance in our national economy.

Pollination by honey bees has been always a subject of great interest to me. Perhaps there is some significance with respect to the trend that pollination as a beekeeping or agricultural practice is taking today in the fact that ten years have passed without my writing another article on the subject.

Just what has happened to pollination as a beekeeping practice? We can point to the specialized legume-seed producing areas of the West and Southwest where bees are used extensively for pollination of legumes. We can point to the pollination of fruits and berries in a limited sort of way. But what has happened to the many, many pollination experiments and practices which were taking place in Ohio, Michigan, Minnesota, Wisconsin, Iowa, Nebraska, Oklahoma and other states some five to ten years ago?

To get an understanding of what has happened and perhaps is happening today, it is necessary to review certain events of the past.

Looking back, we find that by the

time of World War II, the behavior of honey bees as pollinators and their importance to the pollination of legumes, fruits and berries had been

pretty well established. Most authorities agreed that the pollination services of honey bees to agriculture were worth from 10 to 15 times the value of honey and beeswax they produced. But the great emphasis on pollination came at the start of the war and this influence still is being felt, especially in the field of bee research.

It was during the period of World War II that this country was aroused to the fact that we had a serious shortage of legume seed. A survey in 1944 showed that we had set a booby trap for ourselves in war food production by failing to save enough alfalfa, red clover, alsike, sweet clover, ladino clover and grass seeds. John W. Nicholson, chairman of the Government's Seed Task Force Committee, reported that the shortage of legume seeds could result in an international disaster. It is fortunate for us that this did not happen.

Recognizing the need for action, Congress provided funds for incentive payments of $3.50 per acre for harvesting this legume seed, and appropriated an additional $12,500,000 for incentive payments on harvested clean seed. Supplies of legume seed did not increase materially, however, so, in 1949, the Department of Agriculture announced a price support program for 32 grass and legume seeds to encourage their production. This program was continued until 1954 or 1955, but is no longer in effect.

In 1947, Jas. I. Hambleton, then head of the Bee Culture Laboratory, stated that the gradual decline in the per-acre production of legume seeds had become so serious that Congress had appropriated funds for investigating problems involved in their production. Two centers of research were established at that time, one at Logan, Utah, in cooperation with the Utah Agricultural Experiment Station, and the other at Columbus, Ohio, in cooperation with the Ohio Agricultural Experiment Station and Ohio State University. The Ohio center was to be shifted later to the University of Arizona at Tucson. The pollination research was to be continued and expanded to even more of the branches of the U.S. Bee Culture laboratories throughout the country and this research has continued in these centers up to the present time.

The State Experiment Stations and Colleges also established research programs relative to the pollination problem—programs virtually too numerous to mention here. Many of these programs have continued up to the present time; some have been discontinued. G. E. Bohart in an excellent article appearing in Bee World for April and March, 1960, entitled, "Insect Pollination of Forage Legumes," reports the extensive research carried on from 1950 to date. Bohart lists 45 references to publications on this subject from 1950 to 1960. This certainly is proof of the great amount of research that resulted from the war crisis and has continued to snowball down through the years since—research which doubtless will play an important role in the future of the beekeeping industry.

Also in 1949, the honey industry was faced with a 20 million pound surplus of honey which was depressing the market and making honey production a non-profitable operation. Primarily because of the importance of honey-bee pollination, an export subsidy program was established which made its possible to re-establish our export markets and to remove our surplus. At the same time the industry was trying to get the Secretary of Agriculture and Congress to extend price support to the honey industry. This was finally accomplished through an act of Congress in 1950 and the primary reason for Congress doing so was their recognition of the importance of honey bees in the pollination of more than 50 food and seed crops. Although support prices have not been maintained at a high level, it can be truly said that it has constituted a floor for the price of honey which has meant a great deal of good to the entire beekeeping and honey industry.

In 1952, the American Bee Journal recognized that the subject of pollination was important enough to devote two entire issues, the July and August ones, to a Pollination Roundup. The many authors of the articles at that time still pointed to a shortage of legume seeds; they stressed the importance of honey bees to our agricultural economy; and nearly all were confident that pollination held a great future for beekeeping. Excerpts from some of them should be of interest.

Dr. W. E. Dunham, Ohio State University, said "This pollination service is so fundamental and the need so great that the largest portion of our beekeeping personnel may as time goes on be involved in this specialized phase of agriculture." Harry J. Whitcombe, California pollinator and author of the book "Bees are My Business," referring to pollination, said, "A vast new field of economic endeavor confronts the beekeeping industry," and "The future for American beekeepers has never had more promise."

Lyman E. Coe, then with the Noble Foundation of Oklahoma, stated, "The seed growers are as much interested in our industry as we are in theirs, and agricultural workers in all the services are watching with keen interest this transition from honey production to seed production." Dr. J. E. Eckert, University of California at Davis, writing on the dangers of pesticides to beekeeping, stated, "The value of honey bees to agriculture is being realized, and the industry can profit more by demonstrating this fact than by militating against the use of pesticides."

But most articles were confined to the problems of pollination practices. S. W. Edgecombe, then at Utah State Agricutural College, said, "Working together, the farmer and the beekeeper can produce maximum yields. Bees are often the key to prosperity, but other crop production factors also are important." H. W. Longfellow, California farm advisor, was more specific—"Among the factors which influence the production of seed are soil and soil moisture conditions, time of planting, the blooming period, irrigation practices, weed control, insect control, pollination, harvesting efficiency and general weather conditions. Unfavorable conditions in any one of these several categories will affect the yield of seed."

The pollination band wagon was certainly on the roll by 1952, but somewhere along the road of destiny the general beekeeping participation in pollination as an agricultural practice has bogged down considerably since then. Again, this is not to say that pollination is not playing an effective role generally throughout the country. Certainly in specialized areas of fruit production and legume seed production, it is definitely an important factor, and research has con-

Crimson clover. Samples of seed in cages compared to the bee pollinated area.

tinued up to the present time with all its importance.

In an editorial in the May 1953 issue of the American Bee Journal, in answer to the Government's annual urging of beekeepers to increase their efforts toward utilizing bees in pollination of crops on a remunerative basis, as they announced the price support program for that year, this was said: "In the major seed and fruit producing areas, pollination on a remunerative basis to beekeepers has made important strides in late years. The Department need have no concern that such pollination will continue on an increased basis. In the general farm areas, however, pollination cannot be expected to play a role in remuneration to beekeepers regardless of how much good bees do through pollination. There is little reason to believe that this situation will change in the future. Nevertheless, bees are needed in these areas for pollination, so honey must pay the way for the beekeeper."

We had little idea of what was actually to take place in the years up to the present—nor how completely right this prediction was going to be. It was simply recognizing the many difficulties facing the practice of pollination in the general farming areas.

To find out what has happened, we sought the advice of friends which included Dr. C. L. Farrar, Head of the U. S. Bee Culture Laboratory; Newman I. Lyle, beekeeper, farmer and a member of the Iowa Soil Conservation Committee; Dr. R. L. Parker, Emeritus Professor of Entomology, University of Kansas; Professor B. Elwood Montgomery of Purdue University (who was kind enough to write from Denmark where he is attending an International Pollination Conference, after consulting with Frank E. Todd, of the Bee Culture Laboratory, Tucson, Arizona, and John Medler, University of Wisconsin); and R. J. Wahlstrom, Associate Professor, South Dakota State College. To these men I must give full credit for much of the following information.

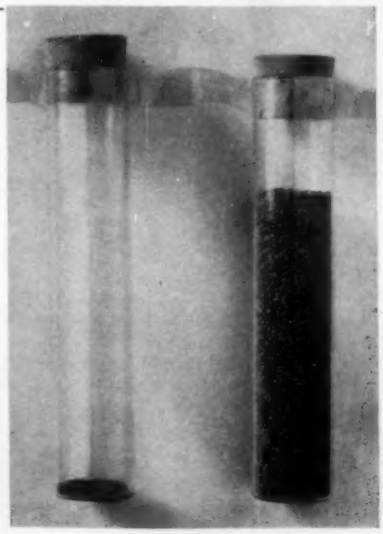
As Newman Lyle pointed out so well, during the last five years or so there has been a technological revolution in agriculture, bringing with it as many changes as in any thirty- or forty-year period since 1860. Modern insecticides, herbicides and fertilization now make it possible to grow corn and other cash crops continually on the same land without rotation. Fertilization also has made it possible to grow increased tonnages of forage thus requiring fewer acres for hay and silage. Many farmers are keeping their dairy cattle in dry lot and cutting forage which is hauled in for feed. They get almost 100 per cent greater increase in feed in this way from the same acres. Supplementing feeds with proteins, minerals, vitamins and antibiotics have made feed conversion more efficient. Profit margins for farmers have been so thin, it has been necessary for them to cut corners and to adopt practices in ways never dreamed of before.

While the U.S. Department of Agriculture predicted in 1950 that greatly increased poundage of legume seeds would be needed by 1960, this has not developed. With the exception of the production of alfalfa seed, the production of other legume seeds actually has declined. Certainly the production of legume seeds has kept pace with our population increase.

This has partly resulted from the great advances in legume seed production. Certified seed has become generally adopted and guarantees the growers that they get only the best and purest strains. Thus, seed production has shifted from the general farming areas, from states like Nebraska, Kansas and Oklahoma, to California and the Southwest where not only pollination by honey bees is practiced but other factors such as soil improvement, irrigation, control of weeds and insects and the like can be controlled. This naturally becomes an expensive process but their seed yields are so great they can produce certified seed and market it in the Midwest as cheaply as Kansas can produce common alfalfa seed.

Moreover, plant breeders have selected resistant varieties which either remain free of disease, withstand insect damage and climatic conditions, or are less susceptible to them. It is understandable that with higher production of forage and stands which live longer giving more years of production, less seeding is required.

The soil bank has been another factor. This program was initiated in 1956 but really had its start in 1957. Interest in this program has increased, particularly during 1959 and 1960. Previously $13.00 an acre was the maximum payment a farmer could receive but the payments now are measured by the production record of the land involved, and can amount to as much as $25.00 an acre. Contracts run for three to ten years, three years being for land already under grass cover, five years for bare land to be seeded, and ten years involving tree plantings. While this program



Lower picture, at left, 5 oz. of vetch seed hand harvested from a 100 foot square, screen enclosed area, 100 yards from the apiary - equivalent to 136.1 lbs. per acre. In center, 18 oz. of seed from a 100 ft. square area exposed to bees - equivalent to 490 lbs. per acre. Right, 12 oz. from a 100 ft. square area exposed to bees a distance of ¼ mile away - equal to 326.7 lbs. per acre.

Picture at right, ladino clover seeds. At left, 365 seeds from 100 heads when bees were excluded. Right, 13,946 seeds from 100 heads when bees had access to the clover.

Melons and bees; they go together.

originally called for additional supplies of legume seeds, the tendency was to plant a major part of cheaper grass seeds. Certainly the need for legume seed supplies for this program has tapered off and what will happen to these acres as contracts expire is a matter of conjecture. In certain areas, it has provided nectar forage for beekeepers but it has had little effect on the need for honey bees for the pollination of legume seed crops.

Another factor affecting the honeybee pollination picture is that it has been demonstrated that the highest amount of protein with the least amount of fiber is obtained when alfalfa, to use an example, is cut when or before it is in 10 per cent bloom. Alfalfa dehydration also is extensively practiced in the plain states of Oklahoma, Kansas and Nebraska—states which formerly produced large quantities of seed. Under this form of management, the alfalfa is cut before reaching the blooming stage all during the growing season. Alfalfa only is left for seed in these areas when the second crop experiences dry and hot conditions.

No one should think that the need or the importance of honey bees for pollination of food and seed crops is a dead issue. Dr. C. L. Farrar wrote, "If we fully utilize our national pollen and nectar resources, there would be no critical pollination problem and agriculture would benefit. Pollination research certainly can be expected to have a long-range benefit to agriculture. Those working in the area have made substantial progress, yet there are many more problems to be solved."

It is only reasonable to assume that the continuing research on pollination holds a promising future for the beekeeping industry.

Also, there is reason to think that the pendulum of agriculture will in time swing back to conditions more like those that existed in 1950. One wonders how long farmers can continue to "mine" their land through the use of fertilizers, insecticides and herbicides? What are these chemicals doing to our soil? What is happening to soil tilth? Certainly, erosion of land unfit for the plow will some day be corrected.

With our expanding population—a continuing high standard of living—greater emphasis on healthful foods, it is only natural that we can expect to see as time goes on, through the soil conservation service and other agencies, the day when each plot of land will be devoted to the use for which it is best suited. Surely we can look toward the day when land suited for pastures will contain the legumes our prairies once were enriched with, supporting herds of wild game that scarcely any of our land will support today.

In all of this the honey bee, along with other wild pollinating insects, will play an important part because of the cross-pollination required of so many seed and food crops. But, except for the specialized areas of fruit and legume seed production, it is doubtful that pollination as an agricultural practice will be remunerative to beekeepers because of the many problems involved.

Current Items

Honey Booklet For Bakers

The Honey Industry Council in 1959 authorized the preparation and publication of a booklet on honey use for bakers. The booklet is now available for distribution.

It was compiled by the joint efforts of Donald Miller and John A. Johnson of Kansas State Agricultural College at Manhattan and Dr. Jonathan W. White of the Eastern Utilitarian and Research Division of U.S.D.A. at Philadelphia. It is contribution 307 of the Department of Feed Milling and Flour Industries at the Kansas Agricultural Experiment Station.

The book of 24 pages contains beautiful colored illustrations and, of course, gives recipes in quantities which would best attract bakers generally. After an explanation of the make-up of honey and why it improves baked products, there are recipes including the production of various breads, rolls and sweet rolls, fillings and cakes of various kinds, honey icings, cookies, macaroon chips, bars, brownies and pies. There are also recipes for pie fillings, homogenized honey whipped cream, and "Strussel Topping."

The booklets are available free by addressing the secretary of the Honey Council, Leslie M. Little at Shelbyville, Tenn. We assume that the bulk of the booklets will be distributed to the bakeries in the United States.

Ten selected references are given in the back among which are included Harriet M. Grace of the American Honey Institute and Mona Schafer of the California Advisory board.

Glass Makers To Feature Honey

Watch your copy of Life Magazine for September 19. There will be a full page advertisement IN COLOR featuring glass, for packaging honey. The advertising will be underwritten by the Glass Container Manufacturers Institute and will reach some 19 million households who read Life. In addition almost 6,000 executive and chain wholsesale warehouses will receive effective merchandising ideas on how they may use GCMI advertising to sell more of their products packed in glass.

Pollination Experience From The Past Fifty Years

by G. H. Cale

Fifty years! Can it be possible that my own experiences with pollination go back that far? Digging back in the brain tissue I have to admit that it's true. Roy Grout has gone into the question of pollination in a very thorough way so I do not here have any intention of duplicating anything that he may have said. If I do so it will be entirely of necessity due to the pollination stories that I will give you.

So now let's go back fifty years. My grandfather was a market gardener in New Jersey not far out of New York City. Many of his crops were grown under glass, among them cucumbers. He was aware of the fact that to get cucumbers of marketable quality it was necessary to use bees for pollination and to have conditions controlled from seed to harvest. He cooperated with one of the big seed companies in producing cucumber seed for distribution.

Each spring an old beekeeper in the neighborhood, driving a horse and a wagon, would bring over several colonies of bees making perhaps two or three trips for each of the long green houses in which the cucumbers were grown from wire supports. This started my pollination experiences.

I remember old Linas saying to me: "Now boy I want you to feed those bees. Don't let them get hungry. You give them saucers of feed every day." So every day I put sugar syrup in ordinary saucers at the entrances of the colonies. I know that the bees lapped up the syrup but whether the syrup was of sufficient volume to do them any good I doubt. Each colony had two entrances one through a sliding window at the back of the greenhouse leading to the outside, one at the other end of the hive opening to the interior. At the top or peak of the house there were ventilators which could be opened or closed and the bees that flew in among the cucumber flowers could go out and back to their hives so there was seldom very much loss in population and we succeeded in getting a good job of pollination.

This cucumber experience followed me into New England where many bees were used in the Boston area for the pollination of cucumbers, hundreds of colonies actually. At that time I was teaching science at an agricultural school and the director and I thought it would be good business to provide the bees for these operators at so much a colony and then take the colonies out whenever they were through with them. If any died we would sell the wax from the poor combs and refill the hives again for next season. Our relationships were terminated however, before we could get very far. Actually, it would have been a good sideline.

Since those days the use of cucumbers for pollination has increased considerably. One of the largest outfits at, Terre Haute, Indiana, uses bees for this purpose under glass and they operate in a big way.

Later, coming to Illinois, whenever, the question of pollination came up

I was led into various episodes. Many beekeepers in the area moved bees to apple orchards, some a distance of several hundred miles. It never was of great interest to me because of the amount of work involved which my job here did not provide time for. However pollination in some of its phases, even with apples, did prove to be of too much interest for me to turn aside from. One experience in particular will bear reporting.

In the hilly country of west central Illinois at Hillview was one of the largest apple orchards in the whole country. At the time some of these apples had not been producing satisfactorily. It was suggested by the entomologist at the University of Illi-

The old way in orchard pollination required placing pollen bearing bouquets near the trees for the bees to use in traveling back and forth.

When right varieties were planted in rows the result was fancy apples fit for roadside sale at a top price.

nois that the trouble might be insufficient pollination.

So the owner of the orchard got in touch with us with the request that we help them. As a result over 450 hives with supers were set up from scratch and packages bought from the south and hived and then the colonies were established in groups through the apple blocks where the crops had been satisfactory. Finally a beekeeper was hired to take care of the enterprise and our part of the job was done. However with proper attention to pollinating varieties these orchards were soon producing paying commercial crops where previously they had not done so.

Later I became interested in the possibility of red clover pollination. Two things were tried with opposite results. Bees were moved on red clover fields with the agreement that half of the seed when harvested which exceeded the average seed crops on neighboring farms was to be ours. As a result at the end of the season the neighboring farms got more seed than we did!

Perhaps it was the distribution of the bees or floral competition or soil. Anyway we tried again but this time the bees were placed along the edge of a clover field and syrup feeders were placed throughout the field so the bees could visit them at the time clover blossomed. Blossom heads were placed in the feeders rather thickly so the bees had to find their way down through them to the syrup. So they were attracted by the clover scent. As a result in this particular experiment the seed crop was three times the normal for the area.

Bees near greenhouse in New Jersey. Maybe they'll fly into the house and maybe they won't.

Therefore it is not just a matter of putting bees and flowers together. It's a question of attraction and even revitalizing. In his book "Bees Are My Business," Harry Whitcomb in California tells of moving bees out of alfalfa seed producing fields when the attention of the bees present in the fields had lessened New bees brought in with higher attention value raised the rate of flower visitation so that at the end of the season there was a phenomenal crop of certified alfalfa seed.

When we were keeping bees in northern Minnesota it was very easy to secure beekeeping locations on seed farms if we agreed to keep the bees in a permanent location so the farmer could get his seed pollinated every year. In other words we got the locations rent free and the farmer got some pollination. However when any attempt was made to interest the farmers in paying for the bees, that was another story. They would not do so.

I think the net result of these experiences with pollination can be summed up this way. Almost every farmer today welcomes the presence of bees on his farm. He is willing to provide a place for them and to report anything that is an emergency by phone or otherwise. He cherishes the presence of the bees and does not want to have them taken away even when it is necessary to do so. So the amount of rent is reduced to supplying a small amount of honey each year as a gesture of appreciation for the free location.

Today successful commercial pollination depends on a cooperative partnership between the farmer and the beekeeper, in areas of large seed production, on a share basis with all of the tricks necessary to entice the bees to work the flowers. In other words it's a commercial business and therefore requires more than small acreage for success. Under these circumstances pollination pays, both for the farmer and the beekeeper.

Robert H. Dadant

It is with real sorrow that we announce the sudden death of Robert H. Dadant, Thursday, August 11, 1960. While on vacation with his entire family north of International Falls in Canada, he died suddenly of a heart attack.

In an ideal wilderness spot which they had visited before, they were enjoying a nice vacation. He had taken a swim with his two older sons and had returned to the cabin when he suffered the attack. He was rushed to a hospital five miles away and was under the care of doctors and nurses when a second seizure resulted in death. A priest was at the bedside to administer the last rites.

Born in Hamilton February 17, 1914, he was the son of Maurice G. Dadant and Helen Hassett Dadant, and was a member of the third generation to own and operate Dadant & Sons, Incorporated. Many in the industry will remember his wife, Lois, who survives along with three sons, Dennis, Andrew and Alex, and one daughter, Melissa.

Bob Dadant was a leader in the beekeeping industry and will be remembered by a host of friends. He was a director of The American Honey Institute, a past-president of Bee Industries Association, and a former member of the Honey Industry Council of America. He was Treasurer of Dadant & Sons, Inc. but active in the business beyond this capacity. He virtually was business manager of the American Bee Journal although he never assumed that title.

In his home town, he was an outstanding leader in civic and religious affairs. He was a member of St. Mary's Catholic Church, the Knights of Columbus, a past-president of the Kiwanis Club of Hamilton, a director of the Security State Bank of Hamilton, and a member of the advisory board of St. Joseph Hospital of Keokuk, Iowa.

The beekeeping and honey industry, as well as his community, will feel his loss tremendously.

Current Items

Rhododendron Nectar Poisonous

J. L. MacGregor of the West of Scotland Agricultural College writes in British Bee Journal of his experiences on the island of Colonsay of difficulties with rhododendron nectar, the poison even decimating the population of a colony beyond recovery, though the brood seems unaffected.

The writer recalls touring the state of North Carolina with the late C. L. Sams. His wide experience in that state had never resulted in an observation of such decimation through rhododendron nectar poisoning, though occasionally the bees of a colony might "roll" before the hive as if in agony. He, himself had experienced mild poisoning from fresh nectar, which would in time pass off with no apparent deleterious effect.

Apparently, in North Carolina, at least, the poisonous effect disappears, just as does the extreme bitterness of bitterweed honey after it has stood for awhile.

Fried Bees

The December "Canadian Bee Journal" has a page on the above subject. It is true that young bees and larvae have been processed and kept in a frozen condition until after proper cooking in a frying pan.

The food, according to Dr. Hocking of the University of Alberta, has about the same content of protein as beefsteak and the vitamin D content of cod liver oil. So far undoubtedly all of our "fried bees" are being imported but Dr. Hocking insists that Canada can produce as good fried bees as any country. The bees can be either pan fried, butter baked or cooked in a dry pan. Dr. Hocking says they are more like flakes of breakfast food.

Echoes from the Past

Our Poor, Slandered Drone Asks for His Day in Court

by Rev. L. L. Langstroth
(from ABJ 1888)

"Virgil, who was a great poet, but not enough of a practical bee-keeper to know a laying from a virgin queen, was the first writer of much note, to have his fling at me. To him I was only an idle knave, born to consume the fruits of others' labors, and deserving no better fate than death, by ignominious expulsion from the industrious Commonwealth. Ever since he so grossly libeled me, to compare one to a drone, is the most orthodox form of denunciation for laziness, gluttony, and what has been called 'general cussedness.'"

Now I am proud to say to this Court, that I can disprove every charge brought against me, by simply proving, that to the best of my ability I fulfil the express object for which I was born. Surely no creature can do any better than this, and excuse me for thinking that few men do as well.

Charged with Laziness

If any of my enemies had authority to call the roll of my demerits, he would surely begin by accusing me of being too *lazy* to gather honey. But an expert in points of this kind could remind him, that if he examines my proboscis, he will see that it is much too short for sipping nectar from the opening flowers.

Makes no Wax

I am free to admit that I make no wax, but even Cheshire himself, whose microscopes have fairly turned me inside-out, will tell you that I have not a single wax-secreting gland, and am also without those plastic, trowel-like jaws which enable the worker-bees to mold the wax into such delicate combs.

Gathers no Pollen

Now do not insinuate, that I might at least employ some of my leisure time in gathering pollen! Can you not see that my thighs have no basket-like grooves, in which it could be packed—and are quite destitute of the hairy bristles by which the workers hold the pollen in place?

Accused of being a Lazy Coward

No doubt you have often denounced me as a big, hulking coward, that leaves to the woman, the whole defense of the State. Are you not aware that I have no sting to fit me for acting on the offensive? Would that I had one proportioned to my bulk! if only that I might make proof of it, upon all who berate me for not accomplishing impossibilities!

I am not at all ashamed to admit that I spend the most of my time, not given to eating, either in sleeping, or in what you are pleased to call, listless moping about the hive. Has it never occurred to you, that if I should try to assume the restless activity of a worker-bee, I could be nothing better than a meddlesome busy-body, perpetually interfering with the necessary business routine? I guess the silly meddler who would put me up to such nonsense, ought more than once to have had a dish-cloth pinned to his rear, to teach him not to bother the women in their work!

Misunderstood

I am sorry to number Shakespeare among those who have misconceived me, by calling me "the lazy, yawning drone"—but as one of my malingers has likened me to Falstaff, I may be allowed to quote in my own defense, what this great braggart, when accused of cowardice, says of himself to the Prince: "Was it for me to kill the heir apparent? Why, thou knowest I am as valiant as Hercules; but beware instinct; the lion will not touch the true prince. Instinct is a great matter; I was a coward on instinct. I shall think the better of myself and thee during my life. I for a valiant lion, and thou for a true prince." I lie not, like the false knight, when I say, that what you call my laziness, is a matter of pure instinct.

With all your boasted reason, you seem to have entirely overlooked the doctrine of the conservation of forces. You upbraid me with consuming so much of the precious honey, to the gathering of which I contribute nothing? Well! if I made a single uncalled-for motion, would not that necessitate an extra consumption of food? What better can I do, then, than to keep as quiet as possible? There is nothing either inside or outside of the hive which calls for any other line of conduct, until the young queens are on the wing; and as they do not sally forth until long after noon, why should I go abroad any earlier? I can assure you, that if bridal excursions were in order, as many hours in the day as the flowers secrete honey, no worker would ever be earlier to rise, or later to go to bed than myself.

Misrepresented

I, an idle, lazy, listless lounger, forsooth! Does any one wish to witness the most perfect embodiment of indefatigable activity? Let him then look at me, when at the proper time, with an eager, impetuous rush, and a manly, resonant voice I sally from the hive! See with what amazing speed, I urge, what our old friend Samuel Wagner, called my *"circumvolating"* flights! For ought you know, I may cover greater distances in describing these vast circles, than the busiest worker, in the longest summer day. There is great need then, that I should be abundantly provisioned for such exhausting excursions, and it is only a law of nature, that on my return from them, all that I carried out with me, should be found to have been used up. If you taunt me either for the full or the empty stomach, I merely ask you if you have never heard of honeymoon trips your own people, which began with extra-full purses, to end only with uncomfortably light ones?

Savage Delight over my Death

To cap the climax of your abuse, what savage delight you take in seeing the workers drive me from my pleasant home! and how glibly you can moralize, over what you call a righteous judgment upon a life spent in gluttony, and inglorious ease! Just as if you did not know that the whole economy of the bee-hive is founded on the strictest principles of utilitarianism. Is not a worker-bee when disabled by any accident, remorselessly

dragged out to die, because it can no longer contribute to the general good? Even so exhaulted a personage as the queen-mother herself, as soon as it is plain that her fertility is too much impaired, has a writ of *supersedeas* served upon her, in favor of one of her own daughters.

Knowing well the law under which I was born, I urge nothing against being put to death when Shakespeare's "pale executioners" deem the day of my prospective usefulness to be over. Truly, the sword of Damocles is suspended over my head, and from the hour of my birth, till that of my death, it may fall at any moment. Many bitters are thus mingled with my sweets.

I have time to mention only one more. While I know that most of the young queens come safely back from their wedding excursions, I cannot help sometimes foreboding the worst, when I see that no drone ever returns to tell us of his experience.

Appreciated by Bonner

I will close my defense by reminding you how the good father of the great Scotch beekeeper, Bonner, showed his appreciation of our persecuted race. It was his custom to watch every year for the first flying drone. Its cheerful hum so filled him with delight, as the happy harbinger of approaching swarms, with their generous harvest of luscious sweets, that he called an instant halt on the work of his busy household, and devoted the rest of the day to holiday feasting. The patron of the drones ought forever to bear the honored name of "Saint Bonner."

The Decision of the Court

Sir Drone:— This court having heard your defense, declares it to be a true and manly one, all those to the contrary notwithstanding, who would further injure you by calling it nothing more than crafty special pleading. It only regrets its want of power to punish adequately your slanderers. But, alas, my worthy fellow! you must not expect too much from this acquittal. Remember how difficult it is for Truth to overtake a Lie that has got a start of only a single day. No doubt the time will come when those who have been stigmatized as the

"Lazy Fathers of the Industrious Hive"

will be held in due honor by the world; therefore console yourself with this bright hope for the future of your race, while you protest against the lies that have had so many centuries the start of your true story, that you may well despair, in your short lifetime, of ever overtaking them.

Morals from the Drone's Plea

It were easy to draw more than one good moral from the drone's plea, such as, "Do not give even a dog a bad name, unless you are quite sure he deserves it," but the moral which I think at the present time can hardly help suggesting itself to well-read beekeepers, may be very fairly styled the

Moral of the Prof. Wiley Scientific-Pleasantry Lie

It is only too well known, to the sorrow of most of our large honey-producers, that some years ago Prof. H. W. Wiley, an entomologist in the service of the Government at Washington, published substantially this statement, viz: That honey-combs, after being manufactured, filled with glucose, and sealed over, all by human skill, so nicely as to escape detection, are largely sold as genuine bee's honey; when the bees have had nothing to do with a single step in the whole cheating process. This absolute falsehood having got a good start as coming from a *scientific man (?)* has widely, at home and abroad, prejudiced the public against buying the purest honey in the most beautiful combs.

Many times have I heard the above story spoken of as either undoubted truth, or have been asked if it were not the truth. It has been refuted again and again, and large sums of money have been offered by responsible parties, to anyone who will produce even a small specimen of such a man-made product; and yet the story is constantly appearing in print in America, Europe—and not long ago even in Australia. It has found its way into a periodical of as high repute as the *British Bee Journal*, and it sometimes seems to have a regular vitality *for mischief*, than when it first started out on its hurtful career.

Prof. Wiley, when called to account for fabricating such a story, thought it a sufficient excuse to say that he meant it only as a *"scientific pleasantry."* Could any one wish him a harder task than over his own signature to try to stop the march of such an inexcusable utterance? Could there be a stronger condemenation of his conduct in this matter, than the words of Holy Writ? "As a madman who casteth firebrands, arrows and death, so is the man that deceiveth his neighbor, and saith, Am I not in sport?"—Prov. xxvi. 18, 19.

Dayton O,. March 8, 1888.

Superseding Fertile Workers

by Godfrey Bohrer

(from ABJ 1878)

Mr. Editor:—On page 144 of the January number of the *Journal*, I see an article from Mr. John S. Rose, in which he gives his mode of treating a colony of bees containing a fertile worker. He states that he was successful in introducing a queen, after subjecting the colony to a dose of puff-ball smoke. Having less faith in that kind of treatment than I perhaps should have had, I did not test its merits in either of the cases to which I am about to refer; nor do I know that I ever will test it, so long as the mode of treatment to which I subjected two colonies, during the past season, proves successful.

The first was a colony which, from some cause unknown to me, lost its queen in the latter part of March. They failed to rear a young queen, and in a short time I found eggs deposited in the cells of both worker and drone-comb. I found as many as four eggs in one cell, and on close examination I was satisfied there was nothing in the shape of a true queen in the hive. This further convinced me that I had a fertile worker to deal with, or some kind of an egg-laying creature or creatures that did not properly understand the bee-raising business—there being more eggs laid in one cell than could be matured in so small a space. How to get rid of this kind of egg-laying creature puzzled me exceedingly. I thought of puff-ball, but being too much of a sceptic with regard to its effect as a remedial agent in such cases, I determined to adopt some other mode of treatment. It being early in the season, I had no queen to give them. I therefore gave them, from another hive, a frame containing worker brood in various stages of development; having first taken from them such combs as contained eggs laid by fertile workers. They at once took possession of the brood which I furnished them, and reared a queen which became fertile. Thereafter the colony began to prosper, and

continued to do so through the season.

Later in the season, I removed the queen from another colony and inserted a queen cell in her stead. The young queen hatched, but was lost I suppose on her bridal tour, as I never saw her after she was five or six days old, although I looked for her repeatedly, thinking she might possibly have escaped my vision. But being finally convinced that there was no queen in the hive, and finding, several days after the repeated searches, eggs deposited promiscuously in the cells, and ranging in number from one to half a dozen in a single cell, I was convinced that I had another case of the fertile-worker complaint to deal with. I began operations as in the first case, by taking from them all the combs containing eggs; but instead of giving them worker-brood, as in the previous instance, I gave them a finished queen cell, which they destroyed. I repeated my former operation by giving them another, which was received and the queen hatched. As in the other case, she became fertile, and brought out the colony in a prosperous condition.

How such a course of treatment would answer in another case of the kind, I am not prepared to say; but that it has proved successful with me in two instances is certain. Nor do I pretend to know more about the philosophy of this kind of treatment (if treatment it may be called) than that connected with the use of puff-ball. Still, I have wondered since my success in those two cases, whether it may not be that all colonies (and especially the Italians, which always defend themselves when queenless with admirable vigor) become very hostile to all strange bees or queens, and refuse to recognize them until they are themselves severely dealt with by the use of puff-ball or of some other stupefying agent. I wish to state here that I do not believe that in either of the above cases all the eggs found were laid by one fertile worker. I know that in the period of twenty-four hours there were more eggs laid than could possibly have been laid by a queen at the head of a populous and in all respects prosperous colony. Besides, during my searches for a queen in those two cases, and especially when I was about convinced that there was no queen present, and began to think of and look for a fertile worker, it occurred to me that if fertile workers come, as it is claimed they do, (namely, by accidentally or otherwise being fed on a small amount of royal jelly) they ought not only to resemble a queen in disposition, but also in shape and locomotion. Thus it was these features I looked for, and I also thought I might possibly find her engaged in the act of depositing eggs, if neither of the above-named marks of difference would enable me to find her. I therefore set myself to searching, and after some time felt confident I had found her; and I yet believe that I found some, but not all. Her conduct somewhat resembled that of a queen while she was walking over the combs; the bees also appeared to bestow upon her some of their usual marks of honor and distinction. But in shape she bore no resemblance to a queen. After walking over the combs for a time, I discovered her looking into a cell and afterwards insert her abdomen in it like a queen in the act of ovipositing. I caught and killed her, and then looked for more, which I found engaged in similar acts as the first. Now, to satisfy myself about this matter a little further, I opened several other hives containing fertile queens, and in no case could I discover a worker endeavoring to play queen by crowding her abdomen deep down into a cell, as though she meant to lay an egg.

These observations led me partially to the following conclusions: *First*, that in cases where Italian colonies lose their queens during the breeding season, we are almost sure to find fertile workers. *Secondly*, that in all such cases we may look for not only one fertile worker, but we may expect them to be numerous, or that there will at least be several found in a hive. And *thirdly*, that by subjecting a colony to such treatment, such as the smoke of puff-balls or other stupefying agents, they almost invariably accept a fertile queen, and the deposit of bogus eggs ceases. I further conclude that if all their combs and eggs are taken from them and worker brood given, they will rear a queen, and by repeated efforts they may be induced to accept a queen cell, provided the young queen therein has not yet begun to pipe. If she has, I think the bees will be likely to destroy her, unless they be first stupefied.

Just how the fertile workers originate I do not pretend to say or know, but I suspect that if any get the royal jelly during the grub state quite a number get it. And it may be that where a queen is taken from a colony the bees give such food to many larvae, and as a result raise no queen. I hope that bee-keepers who may have such colonies to deal with, will put them in observing hives, and by repeatedly noticing their conduct ascertain if possible what kind of bee or bees lay those eggs. I do not claim by what I have observed and have related, to have definitely established the fact that these eggs are laid by common workers, although I have strong suspicions that many workers do possess the ability to lay eggs, and will do so when the colony is not in possession of a fertile queen.

If opportunity should be afforded me during the coming season, I will endeavor to look a little further after the fertile-worker part of the bee creation, and if possible ascertain under what kind of circumstances such colonies accept of queens or queen cells. And I should be pleased to find out certainly under what circumstance, or from what causes, they reject them. Now this may be more than any bee-keeper (myself not excepted) may ever be able to discover, but I shall endeavor not to injure the profession of bee-keeping in making my observations.

Thank You, Nora

"Your Anniversary issues are full of feeling for the past and at the same time full of common sense and enthusiasm for the future. You take the human attitude of man striving towards progress and from the simple view point of practical beekeepers. Also you express the importance of knowledge from Snodgrass, Butler, Ribbands and others. Please continue with your efforts as I am persuaded that you are moving in a good direction. My best wishes for the future."
Nora Baldensperger
Nice, France.
(Daughter of Ph.J.Baldensperger world famous apiculturist)

The Commercial Operator

Plant An Evergreen Windbreak This Fall

Milton H. Stricker

To most beekeepers there is a great satisfaction in having an evergreen windbreak in the apiary. Many times beekeepers look for such a windbreak already established when locating a new yard. The pines or cedars or hemlocks will hold their needles all winter long, making the bee yard warmer and workable in winter months a shelter of deciduous trees.

When thinking of planting such a windbreak, the first objection that comes to mind is the slow growth made by evergreens. However, this is often overcome by liberal applications of acid-type fertilizer or mulching with acid forming material.

In most areas there will be one certain evergreen that grows faster and with more luxuriance than any other. If you can decide which one will grow this way in your area, that is the one to plant. Sometimes you can tell this by looking, and inquiring, at the neighbors' ornamental plantings. Another way is to find some growing naturally in the area. These, with some care in transplanting and feeding, oftentimes will grow as fast or even faster than anything else selected for that area.

For instance, in this section of Northwest Jersey, the red cedar will grow well in many run-down fields, and with some fertilizer, will react amazingly. The red cedar (*Juniperus virginiana*) can be transplanted easily in the spring. With the application of water at planting and some mulching with sawdust, or leaves, trees up to six foot high can be located around your apiary site. Cutting the tops off these transplants the second year will cause them to become bushy and offer a thick growth. These prunings can be used as additional mulch.

If your transplants are small, a temporary windbreak can be made with a few posts driven into the ground and wire stretched between. On this wire tie cedar limbs or cut cedar saplings. These will, in time wilt enough, allowing the fallen needles to mulch your small seedlings or transplants, while at the same time protecting your apiary.

When these cedars are full grown and the cardinals are flitting around gathering the dark purplish berries, you'll know that an evergreen windbreak is worth bringing to maturity.

In southern New Jersey and many other places along the coast, another cedar will grow fast enough to make a good windbreak. This is the white cedar, *(Chamaecyparis thyoides)*. Like the red cedar, it is not a true cedar, but a member of the pine family. It can be transplanted and mulched the same as the red cedar. However, it does require more water and if a dry place is selected for it, it should be watered continuously the first month.

Other fast growers are Scotch pine *(Pinus sylvestris)*, American red pine *(Pinus resinosa)*, Austrian pine *(Pinus nigra)*, white pine *(Pinus strobus)* and Japanese black pine *(Pinus thunbergi)*.

If you have a loamy moist soil, American arborvitae *(Thuja occidentalis)* is a rapid grower. Though you may not find this growing naturally in your area, it is worth buying and planting. Shearing this several times in the first few years of planting will result in a dense hedge that will protect your apiary through years of drought or rain.

One beekeeper in this State has one of the most ornamental evergreen windbreaks I have ever seen. This beekeeper has taken native holly *(Ilex*

Natural windbreak of White Pine.

Hillside apiary where Red Cedar grows naturally.

Apiary with Pitch Pine windbreak.

Red Cedar limbs tied to wires make an excellent temporary windbreak while young transplants are growing.

This Red Cedar windbreak was planted about ten years ago.

Fast growing Red Pine was planted on the north side of this bee yard.

opaca) transplanted from the neighboring woods and mulched it with sawdust and oak leaves. It has grown so well that it is about 5 feet high and a joy to behold. In the winter it is alive with birds squabbling over the brilliant red berries and it keeps the snow and north wind from the apiary.

These seedlings were transplanted when they were from six inches to a foot high so there wasn't any selecting done as to males or females. However, it has worked out that about half the planting is of female trees bearing the prized berries. Though holly is a slow grower, this has done well with only 2 additions of fertilizer in the past five years, plus the constant mulching.

Beekeepers in the southern part of this State search for apiary sites with natural windbreaks of the native Jersey pine *(Pinus virginiana)*. Those beekeepers in this same area that wish to plant their own windbreak will find that either the native Jersey *(Pinus virginana)* pine or Longleaf pine *(Pinus palustrus)* or Slash pine *(Pinus caribaea)* will grow quickly with a minimum of care in poor soil.

If you have always envied the beekeeper with an evergreen windbreak around his bee yard, you can have the same if you'll start this fall. Just remember: fertilizer, mulch, and water will bring along even the slowest windbreak quicker than you ever suspected.

New Jersey

BEE BEHAVIOR AND ITS IMPORTANCE TO THE BEEKEEPER

by Milledge Murphey, Jr.

Scientists have long maintained that insects lack the ability to think. Most insect reactions, even though intricate and involved, are the result of some instinct which is inherent in the species. The honey bee possesses unbelievable methods of powers of communication. In spite of the fact that she has no reasoning power, the honey bee can give to her sisters the direction, the distance, the richness and the kind of nectar source. When doing all of this she is merely reacting to some instinct which she has inherited from her ancestors. In fact, it is believed that bees have had this instinct for millions of years. It was only through the painstaking observation of Karl von Frisch, the famous Austrian scientists, that man has come to understand this behavior of the worker bee dancing on the comb.

The world's greatest beekeepers have been students of bee behavior. Probably the most important discovery of bee behavior and the one that has had the most to do with modern beekeeping as we know it today was made by Reverend L. L. Langstroth. Prior to 1851 if the beekeeper wanted to examine his bees, he found it necessary to take a knife and cut his way into the hive. In many instances it was necessary to destroy completely the hive when removing honey or making an examination. Beekeepers, fifty years before Langstroth's discovery, had known that a wooden strip around the comb would prevent its destruction when removed from the hive, but it was Langstroth who discovered the behavior pattern of the bee which makes possible the modern hive. The story goes that one day Langstroth had gone through the labor of cutting loose the cover of a hive when he stopped to think about what a hard, disagreeable job it was. At this point he looked down in the hive and noticed there was a space between the combs as well as a space between them and the outside of the hive. The thought occurred that if he would leave such a space over the top of the frames, maybe they would not stick the cover on so tight. The experiment was a success, and his next idea was to put the same space between the combs and the ends of the frames and the hive body. This last idea completed the discovery of the bee space. The bee space as we know it today is approximately 5/16 inch between the movable parts of a hive. This space discourages the bees from propolizing the parts together. Today the bee space is found in all hives throughout the world where successful beekeeping is carried on. Langstroth's discovery seems simple to us, but man kept bees for over 3,000 years before observing and understanding this behavior pattern of the honey bee. It is certainly fitting that the most commonly used beehive in the world is known as the Langstroth hive, and it is a remarkable fact that the hive size devolped by Reverend Langstroth in 1851 is the same size used today.

Another American, amateur beekeeper, G. M. Doolittle, published a book in 1889 that all beekeepers should read. The book is entitled "Scientific Queen-Rearing." I do not suggest reading the book to go into the queen-producing business, but to get an insight into the author's observations on bee behavior. Doolittle is known as the founder of commercial queen rearing and rightly so. His methods, which were developed between 1870 and 1889, are still used today. Early in Doolittle's experiences in queen rearing, he observed that superior queen cells were developed in hives under the swarming or supersedure influence, and in both of these conditions the hive producing the queen cells was queen right. He noticed the cells were large and abundantly supplied with royal jelly. In contrast cells produced in queenless hives were generally smaller and were not as abundantly supplied with royal jelly. Through these and other observations, he developed his system of building cells above a queen excluder of a queen-right colony. He called this using nature's way of getting large superior queens. In his book Doolittle always refers to his and other's observations on how the bee responds to man's treatment of the hive. If you get the chance, read this interesting little book. I try to read it once a year because each time it makes me realize how important it is to remember the way bees respond to their natural instincts and how our manipulations bring about changes in their behavior patterns. In the preface of the book, "Scientific Queen-Rearing," Third Edition, the publisher supplies an interesting note from Doolittle. When asked by the publisher if any changes were necessary for the 2nd Edition, Doolittle replied, "I do not care to rewrite or revise any of the chapters in *Scientific Queen-Rearing*." Ten years later when the publisher made the same request for the 3rd Edition, he replied, "*Scientific Queen-Rearing* is all right yet. No revision is needed." These remarks from Doolittle show the thoroughness of his investigations which were based on careful observations of bee behavior.

To be successful, a beekeeper must have good queens and good brood combs. Doolittle supplied the means for getting good queens. Good brood combs must be produced by the beekeeper in advance. Prior to 1959 the beekeeper had only one way to get

Grafting day old larvae into artificially made wax cells, a method first used by Doolittle.

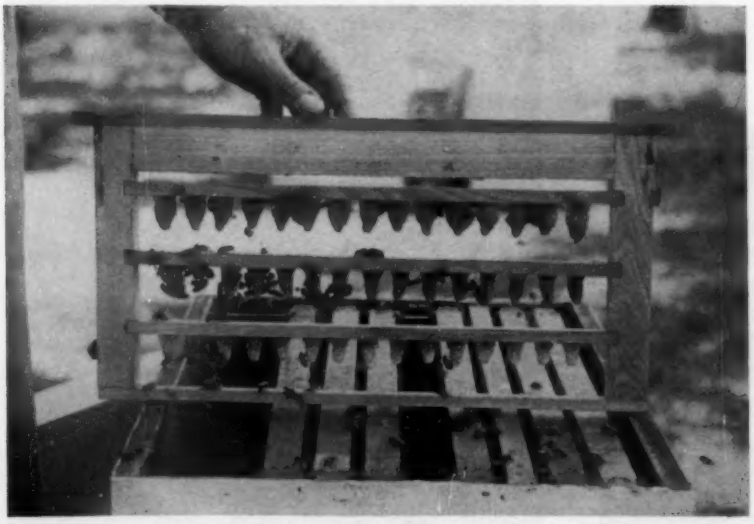
good brood combs. This was by using good foundation and placing it directly above the brood nest during a honeyflow. Foundation placed in this manner is completely drawn out with worker cells from top to bottom and side to side. If foundation is placed in the hive without a honeyflow the bees have a tendency to cut the foundation, making it worthless for use as brood comb. If the foundation is placed directly in the brood nest, the bees cut out the lower corners and a strip across the bottom. The cut areas eventually are filled with drone cells, making it necessary to cull the brood frame from the hive.

There are two habits of bees, from the standpoint of management, that the beekeeper needs to know more about. He needs to know what behavior patterns bring about swarming and what patterns bring about supersedure. Although most commercial beekeepers seem to be unconcerned about swarming, it is probably the biggest honey "robber" we have. If swarming could be prevented by using a simple manipulation in management, I believe the average beekeeper could increase his honey yields 20 to 25 per cent from most of his apiary sites. We all can list a number of things which cause a colony to swarm, but I believe in every yard will be found several colonies which have everything wrong but still do not swarm. There must be a behavior pattern which has been overlooked which if controlled would prevent swarming. As far as I know, no one has ever discovered this secret. The development of the queen substance theory, during the last few years, may be the beginning of the answer to this serious bee problem.

The other habit, supersedure, has always been a very desirable trait to have in a bee yard. Colonies which have this characteristic remain populous year in and year out with little need for manipulation by the beekeeper. Just what causes one colony to supersede and others to die out is not known. If we could find the answer to this riddle and develop a simple manipulation to cause a colony to supersede, the yearly requeening problem would be reduced to a minor operation. The behavior pattern we are looking for is not new; in fact, it is millions of years old. Maybe another amateur beekeeper will discover this secret of the bees. Research in this area should be increased. However, the beekeeper has the best chance to find the answer. All beekeepers have hives which supersede year after year. These colonies should be observed carefully to determine if they have some characteristic in common. Then experiments with these common factors may lead to the answer. The solution to both of these problems may be just around the corner.

Throughout the history of beekeeping, improvements in management have always developed from close study of bee behavior. Through careful observations of the bees and the environment in which they are working, man will be able to find the answer to all present and future problems of successfully handling honey bees.

Florida



Queen cells being finished above a queen excluder in a queen right colony, a method also developed by Doolittle and still used today.

ARE YOU QUEEN CONSCIOUS?—YOU SHOULD BE!

by Glen Holterman

Experience teaches that good qualities are not tied to color in queens. The size of the queen on arrival in a cage has little bearing on her productivity. The appearance of the attendant bees in a cage is no indication of the queen's origin. Attendant bees are from mating nucs from any available bees while the queen larva is carefully selected from a proven mother and from tested stock. Reputable queen raisers do their utmost to supply what is wanted and when it is wanted. To prove conclusively the value of new stock a solid half of a yard should be requeened. Then you can compare results.

Very often when a few colonies excel in a season it is some other controlling factor at work, like early pollen and honey, a young queen laying late the previous year or the colony arriving at supering stage just as the flow starts, or confusion in location which brings a large number of neighboring bees into one colony. Nurse bees and loaded bees are accepted anywhere (it should be kept in mind too that disease can be spread by drifting nurse bees on their first flights).

This brings us to the question of why some bees are accepted and others are not. If queens are the same it would seem that the action of the new individual is the key note. A loaded bee cannot be nervous. A young virgin that has not been in contact with other bees is so glad to be among her kind that she usually settles into a hive at once. A nervous mated queen sometimes will be accepted when a little honey is placed on her wings. A heavy laying queen can be dropped on almost any brood combs if there is no robbing.

Success in the bee business depends on three things, location, management, and keen observation. Proper interpretation of observation comes with repeated incident.

Ontario

Our Cover Picture

This picture of a honey bee gathering nectar and apple pollen was furnished by Encyclopaedia Britannica Films, Inc., New York. It was first used in April, 1950.

Special Features

BEARS AND BEES

by TREAT DAVIDSON*

Oil and Honey is an unusual combination but my friend Dave Johnson handles it nicely. Bees flying around the oil lease he manages aroused his curiosity. Fascinated by bee literature, he enrolled in the Pennsylvania State University to study apiculture.

After this thorough preparation, Dave installed three colonies in a small clearing in the deep woods which surround the lease here in the Allegheny Mountains of northwestern Pennsylvania. The first year however ended in disaster: A bear demolished two of the hives.

When Dave talked to the game warden he learned several things about bears and their love for honey that were not taught in college. Bears are reluctant to cross open country, especially within sight of a house, but in the woods, bees are eagerly sought and quickly located. As the warden thought the bear would return that night to finish the job he gave Dave permission to shoot it if he could.

As the location was dimly illuminated by a nearby flare which burned surplus gas from the wells, Dave decided to try. He collected the uneaten frames of brood and honey and put them in a pile. After carefully placing his automobile where it could be used as a blind he ate a few sandwiches and awaited developments.

In the gathering dusk, fog began to drift down the hillside. With visibility cut to a few feet Dave was about to leave when he heard the bear. Thinking of all the careful sighting he had done to insure proper handling of the rifle from the car, he decided to take a shot which would at least scare his unseen target away. After pulling the trigger he heard the bear crash through the underbrush but was amazed the next morning to find a 300 pound bear stone dead within two hundred feet of the bait.

After this experience the clearing was surrounded by a strong wire fence and a small building put up nearby for storage and washing up after work. The bees prospered, the apiary grew and Dave had ceased

* Many readers will recall the article in The National Geographic Magazine for August, 1950, "Inside the World of the Honeybee" by Treat Davidson. His pictures in color were outstanding and his text was fascinating. This story of the bears is a factual account.

Bottom left—Bruin takes a sniff: "What bees? That means honey!"

Top right—"Let's see now, how'll I get at this contraption?"

Bottom right—"Well, durn it, I'll just kick the thing around. I'm not afraid of bees."

to worry about bears when it became evident that one was nightly attempting to get through the fence. This time the game warden had a large box trap hauled in, caught the bear for release in the Allegheny National Forest.

The last time bears were seen in the vicinity was in broad daylight. Dave, hearing a noise as he was washing up, looked out to see a year old cub wriggling under the fence while his mother stood by. Grabbing his loaded rifle from its rack he fired through the closed window. The mother bear fell as he again fired and hit the cub. Starting out to investigate he was amazed to see two more cubs. One of these was brought down with the last shell as the other disappeared in the woods.

In the face of this continuing evidence that bears would always be a problem in that location, Dave finally found the solution. The U.S. Department of Agriculture let him have their plans of an electrified fence which fully protected hives from bears in the Yellowstone National Park.

When I became acquainted with Dave his bee business had grown to such an extent that he had several "out apiaries" and customers throughout the United States.

At this time I was gathering material for the National Geographic Magazine story "Inside the World of the Honeybee." Dave's experience with bears fascinated me. Everyone has heard of it but few, if anyone, has seen it happen. How did the bears go about it and could it be photographed?

David Titus, our Warren County game protector, told me that bears regularly fed at isolated garbage dumps hereabouts in the fall when fattening up for their hibernation and offered to let me know when they started. A camera, flash and hive were readied to go on location at a moment's notice but this plan turned out to be just another of the frustrations so frequently connected with animal photography. Natural foods were so plentiful in the woods that the bears did not come out as they generally do.

Later I happened to think of Bill and Lester Piper, Florida's famous woodsmen who had supervised expeditions taking moving pictures of wild life in the Everglades. A long distance call disclosed that they understood the project and would gladly cooperate so I headed south.

After suitable setup had been arranged Bill Piper told me in his quiet way that he had done his best to figure it out but a bear was the most unpredictable of all animals so that from there on everyone, including the bear, would be taking their own chances.

Then the action started. The bear caught the scent of honey and followed it to the back of the hive. After several sniffs he stood up to inspect the top, made a half-hearted attempt to overturn it, then sat down to think it over. Next he walked around to smell the entrance where the bees promptly stung his nose. At this affront the bear backed off a couple of lengths, pawed the ground like a mad bull, let out a roar and charged. A hard right and left demolished the hive, strewed comb all over the premises and filled the air with very indignant bees. The bear than gulped brood and honey in spite of repeated stings in his nose and mouth. As the bees were dividing their attacks between the bear and my unprotected hands I was about to retreat when he ambled away surrounded by a cloud of bees.

Although the anticipated week had stretched to a month before the job was done, all concerned were happy: The bear with his honey and I with my picture.

CURRENT ITEMS

Sinus Trouble

In regard to Dr. Jarvis' remedy for sinus and bronchial trouble, I give my experience. A few years ago I began to keep bees as a hobby and ran them for comb honey.

This past summer one of my children brought me one of Dr. Jarvis' books "Folk Medicine." I have been having ragweed hayfever for a number of years beginning in August and lasting until frost and then sinus and lung trouble the rest of the fall and winter. I have paid out hundreds of dollars for doctor's pills with little relief so I decided to try honey in the comb plus vinegar and, Dr. Jarvis, I have found that what is good for Vermont folks is also good for New York folks. It may be that cappings with honey will be just as satisfactory but I take mine straight, honey and comb together,
Lafayette Pasco
Warrensburg, N.Y.

A Wingless Queen

I found a colony without a queen so I gave it a comb of brood. In about two weeks I checked. While I was holding the frame which had three or four queen cells on it I noticed that one queen was emerging. She had no wings. She fell down among the bees and I couldn't find her.

I replaced the frame and the remaining cells back in place, hoping I might get a normal queen: Two weeks later I found the brood chamber full of brood. I gave them a super and waited a few days when I found the super and brood chamber loaded with eggs and brood. I was feeling good. That was about the 28th or 30th day, after I had lost the queen without wings.

Now, much to my surprise, all my emerging bees were drones so I needed to find the queen. I found her at one side of the brood nest and killed her. I placed an excluder on the bottom of the hive and shook the bees in front and found a second queen without wings, the explanation for the brood chamber and super being full of eggs and young bees; no worker bees but all drones.
D. B. Heard,
Garden Grove, California

People are Like Bees

According to Pope John XXIII, speaking at Vatican City, people are like bees in their industry but too in the instinct to sting. He says man has some instincts that are not good and so must rise above them.

Pope John received the beekeepers in Rome in audience at their convention at the same time he greeted delegates to the convention of the Christian Association of Italian Artisans, urging them in their work to make homes more comfortable.

Has The Colony A Queens?

It is impossible to requeen a colony that already has *any* kind of queen at all—even a runt that can't lay eggs! To find out whether a colony without eggs is really queenless, as it appears to be, put a frame with eggs in it in the center, preferably second story. A couple of days later, if colony is queenless, queen cells will be started on that frame. If colony has a queen, she will be found on that frame, with the eggs, even if she didn't lay them.
Rhode Island Quarterly
by Richard Taylor

From The Honey Plant Gardens

by Melvin Pellett

Chivirico

Mr. and Mrs. Carol Barrett, of Gladstone, Missouri stopped here at the Gardens and we much enjoyed visiting with them. They reported that Chivirico, growing profusely in their garden bloomed in August and the bloom was heavily visited by bees including numerous species of wild bees. They were quite enthusiastic about the plant.

Chivirico (technical name *Leonurus sibiricus)* is closely related to Motherwort, an introduction which has become widely naturalized over much of the United States and is a good honey plant. Chivirico is much the taller growing of the two and reaches a height of six feet or more. It is an Asiatic plant, and although I note a reference lists it as naturalized in North America, we do not know of any place where it is growing wild in this country. It occurs in tropical America and it was from there the first seed of it came to the test gardens. For us it begins blooming around the first of September, attracting the bees freely and continuing in bloom until heavy frost occurs. The plant has many flowers all the way up the stems of the tall plants, thus furnishing an excellent amount of bee forage for the area involved. This is especially interesting coming at a time when bee pasture is likely to be scarce. The plant is agressive in nature, a heavy seeder, apparently one which will hold its own to grow in waste places. I expect that Chivirico is a honey plant we will hear more about in the future.

Clavey's Dwarf Honeysuckle

Honey bees work freely on the blossoms of this dwarf honeysuckle when it blooms here in May. This is especially interesting since this relatively new variety is fast gaining in popularity. There is increasing demand for dwarf shrubs used in landscaping. This one fits well into many plantings. It is usually listed as growing to only three feet in height, though we have observed some four feet high in especially favorable situations. It is shapely and attractive and can be used for a hedge which does not require trimming or for individual specimens where a lower growing plant is desired. Clavey's Dwarf Honeysuckle begins blooming at an early age and has considerable bloom on the young plants in our nursery rows. We wish that a greater portion of the plants common in nursery trade were good honey plants. So we expect that beekeepers will be interested in this one in the hope that it will prove a good honey plant and be used widely in landscape planting.

Aralia

Aralia spinosa in the honey plant gardens draws attention on account of its oddity. It is a peculiar, spiny trunk shrub or tree which I find difficult to describe. Though it does not grow fast here, it develops steadily and some of the plants are nearly fifteen feet in height. Common names are Devil's Walking Stick and Hercules Club. The foliage is attractive with the leaves on long stalks, twice compound. It blooms in late summer with flowers in large terminal clusters. We are sure to notice when this plant comes into bloom as the flowers usually form an umbrella over the plants with the constant humming of many kinds of bees.

Adler Buckthorn

Our attention is repeatedly drawn to the Alder Buckthorn *(Rhamnus frangula)* as one of the best nectar shrubs in the collection here where it has been growing for years. It constantly attracts the bees during the long blooming period, May to July. We have observed blossoms and both green and ripe fruit all on the plants at the same time. However, the berries are much sought by birds and do not usually remain long on the plants after they ripen. The birds like the fruit so well that when we wanted to pick some of the seed we found the ripe berries nearly all gone.

Alder Buckthorn is an introduced plant which has run wild in some eastern localities of the United States, where it has been reported as a source of nectar for apiaries near it. It is hardy to a cold climate, listed as hardy to a zone which would include even most of the inhabited parts of Canada. In the collection of shrubs here, for over ten years—Alder Buckthorn continues to grow well; one of the most attractive to the bees, it grows to ten feet in height. It would be a good to plant in many situations as a border or filler shrub.

Vitex

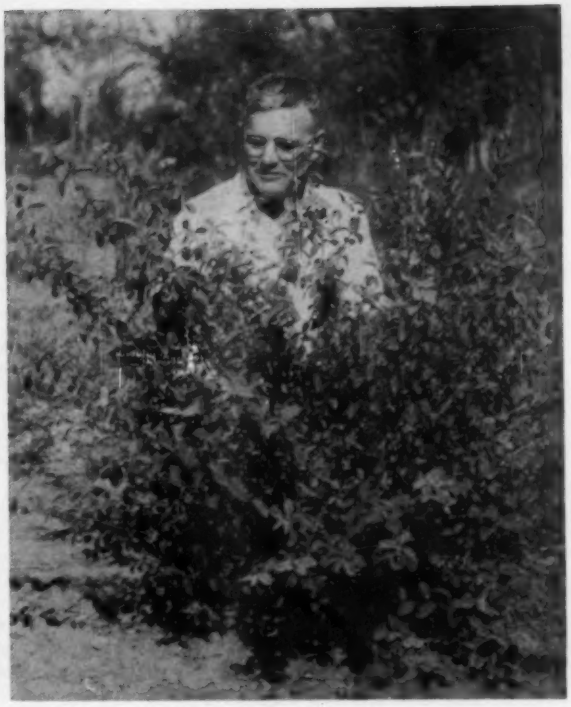
From Mr. Paulo Nogueira-Neto, Brazil, comes an enthusiastic report of Vitex. He describes their climate as similar to that of Miami, Florida. He writes: "Of all the plants whose seeds you sent me, the best one for bees is, in my opinion, *Vitex*. For the tropical stingless bees which I study, it is an outstanding bee plant."

There are a number of varieties of Vitex but *Negundo incisa* is the variety which is an outstanding honey plant and is the variety referred to above. It is hardier than the species and is root hardy in some northern parts of the country. It is drouth resistant, once well established and will grow on a wide range of soils.

Vitex negundo incisa (Cut Leaf Chaste Tree) is a shrub or small tree. It grows to eight feet tall here and in the South may reach heights up to fifteen feet. We have found it root hardy in western Iowa where our extreme winter temperatures are colder than some eastern localities which are farther north. The plants do kill back some winters but grow from below and bloom on the new wood so furnish bloom every season. It may bloom even the first year from seed. Older plants begin blooming in early mid-summer and may continue in bloom until frost, with the bees working it "furiously." It is a perennial which begins blooming at an early age and attracts bees over long blooming period. We know few plants which meet all these requirements for outstanding honey plants.

Atlantic
Iowa

Chivirico grows to more than six feet tall.



Clavey's Dwarf Honeysuckle.

Aralia spinosa flowers in large terminal clusters.

Vitex negundo incisa in first year's growth from seed.

Current Items

$2,000 Theft

Mr. and Mrs. E. J. Lewis of Nahunta, Georgia, suffered the loss of about $2,000 worth of honey and supers when about 80 supers of honey were stolen. About 3,000 pounds were believed to be the amount taken. Mrs. Lewis has operated the honey business during Mr. Lewis' long illness and the loss of so much honey and equipment was a severe one.
("The Atlanta Constitution, by York Bee Company, Jesup, Georiga.)

Safflower

According to Soybean Digest for July safflower meal fed to calves as supplement has about the same protein as soybean flour although slightly more of the safflower is needed per unit of gain. Increases in acreage would indicate safflower may become of interest to beekeepers since Pellett at his honey plant garden in Iowa found it frequented by bees both for pollen and for nectar.

The Beginner and Novice

Editor - W. W. Clarke, Jr.
204 Agricultural Education Building
Pennsylvania State University
University Park, Penn.

• *Question from*
Leo Shubmeir
Jefferson, Kansas

Would you give me a summary of the proper procedure in processing honey. What are the bare necessities for equipment? Would a crude oil filter do for filtering the honey?

Also could a lift be placed on a hand truck for a one man moving operation?

Answer

Your question on processing honey is a difficult one to answer in one letter.

To be brief and simple, honey to be processed should be heated to at least 145° F. and then strained through a fine cloth or wire screen (90 mesh per inch) strainer. It should then be cooled to 100° or lower as quickly as possible and bottled. One purpose of the heating is to allow the honey to pass through the strainer since it is very difficult to strain cold honey. Heat will also retard crystallization and fermentation. Actually, if it were possible to handle honey without heating, we would be able to market a better natural flavored and higher quality honey.

The minimum equipment necessary to process honey would be a water jacketed pan to heat the honey, a source of heat, a tank to hold and bottle the honey, and a strainer of about 90 mesh per inch. A tank similar to the one described by E. J. Anderson, American Bee Journal, Page 188, May 1958, will serve most of these purposes.

I do not believe it would be practical to use a crude oil filter for filtering honey. It has at least three disadvantages: (1) I doubt that you could get one large enough to do a good job; (2) the cost would be high; and (3) it would take extensive heating and pumping equipment to force the honey through.

Yes, it is possible to put a lift on a hand truck. I have seen pictures of one put out by Halls Honey House, Livingston, Montana, and I believe at one time Sioux Honey Association, Sioux City, Iowa, had such a lift. There are probably others.

• *Question from*
Rodger Shuester
Vallejo, Cal.

In the last part of February the weather was warm with fruit bloom on the trees so I began earlier than usual with spring management.Going through a colony and finding the queen I placed her in a new hive with bees and sealed brood with newly drawn combs from foundation. I put this hive on the bottomboard with a queen excluder on top and the hive body with brood above and a super of honey on top of that.

The next day the weather turned cool. I found the queen on the ground with a small handful of bees around her so I put her on the entrance and she went back into the hive. Would disturbing the brood nest so early in the season cause this?

Answer

The weather had nothing to do with your queen being thrown out of the hive. I am sure that you can work with the bees if fruit is in bloom and they are flying. In my spring management I do try to return the frames about the same position in the hive. It is possible that you have injured the queen in your manipulations. This may cause the bees to throw her out. Is it possible that you might have dropped her when you moved the frames?

I hope that you have checked to see that the queen is laying, because they may not accept her once she has been thrown out.

• *Question from*
R. G. Green
Bowling Green, Ky.

This morning, about 11, I noticed bees flying from one of my colonies (March 5). The temperature was 28 above zero with three or four inches of snow on the ground. I feed my bees sugar and try to keep this on the inner cover at all times. Bees are Caucasians. Now why did they fly out?

Answer

It would seem to me that your bees are probably not in good condition. Bees which have ample supply of food and are not disturbed will stay in the hive at a temperature of 28°. Usually we don't find much activity until the temperature is over 45.° There may be a mouse in the hive or they may be short of stores.

I would check them as soon as weather permits (temperature over 45°) to see just what is the problem. If they are low on food, give them a heavy sugar syrup, rather than dry sugar which they may not utilize in such weather. We usually think that the bees should be able to fly to get moisture in order to make the best use of dry sugar.

• *Question from*
M. A. Wroten
Tallulah, Louisiana

I noticed an article in May 1959 about laughing gas. I retrieved a colony from the wall of a house and used about a teaspoonful of 33 per cent ammonium nitrate fertilizer. The bees worked well for about ten days and then they began to slow down. About the 14th day I took off the hive cover and every bee was dead on the bottom. Do you think the gas killed the bees? I did use some paste board with salt peter solution on it.

Answer

In all the times I have used or have heard of laughing gas being used on bees, I have never known of a colony that was killed because of the treatment. I have seen them become mighty sluggish and unable to work for a time, but the effects have always worn off.

I can see no reason why either the laughing gas or the smoke fumes could have killed the bees. I would suspect something else.

That Slogan Contest

The Winner— DR. F. O. HOLMES

Slogan— LIKE THE BEES, WE WORK FOR OTHERS

It's a time back to the June issue when a slogan was called for to use in the American Bee Journal, a slogan of 13 words or less. Sorry it took so long. The slogans were slow coming and this may signify that readers are not as interested in a contest as they were. We take it that way anyway and so we are planning on something different for 1961, something we believe most readers will like. We won't give up the contest idea but we will have a number of contests at a time, all interesting. Also, since so many readers among the women, scold us for leaving out the recipes maybe we can devise a new approach to recipes that will satisfy them and present recipes in a different way. So watch us in 1961.

Now for the slogans again. The one above from Dr. Holmes will be used running through the pages of the Journal. He sent two others: "Bees Work for Others - Do You?" and a shorter one in the same vein: "Bees Work for Others." Dr. Francis O. Holmes is the author of the article, Boron Deficiency as a Probable Cause of the Failure of Bees to Visit Certain Flowers, on page 102 in the March issue. He is a plant pathologist connected with the Rockefeller Institute in New York City. As a hobby he has been studying nectar secreting plants on his farm in Henniker, New Hampshire.

The second winning slogan is from Jerome Koch, Payne, Ohio: "ABJ is a Source of Inspiration for the Aspiring Junior Beekeeper." (We hope so). Third was from Mrs. John Koch also Payne, Ohio: "ABJ is a Bee Jockey for the Progressive Beekeeper." (Do we spur them on?) In this case the whole family had to get into the game as we have this from John Koch: "The Ideal Up-to-date Monthly Publication for the Beekeeping Profession" and also: "A Helpful, Handy, Monthly Magazine for Better Bees and Beekeeping." There were a number of others but they got off the beam a bit as the slogans were not ABJ slogans.

Anyway folks, the few of you, thanks considerably. You will be hearing from us.

EDITOR

Mrs. Walter (Pat) Diehnelt

Rt. 1, N83, W13799, Fond du Lac Ave.
Menomonee Falls, Wisconsin

Games
Recipes
Contests

Try These Recipes

Honey Apples

6 tart apples
½ cup honey
1 ½ teaspoon grated lemon rind, nutmeg

Start your oven at 375. Wash apples (don't peel) and scoop out the cores, leaving base of apple intact. Fill cavities with honey, add lemon rind (about ¼ teaspoon per apple) and sprinkle with nutmeg.

Bake apples in a covered casserole or baking dish 30 to 40 minutes, then remove. Cover and bake 10 minutes longer or until apples are tender. Delicious.

Mrs. Martin Roth
Route 1, Manor, Texas

Banana Cream Shake

One very ripe banana, one tablespoon dried skim milk, 1 teaspoon dried brewers yeast, 1 teaspoon honey, and 1 cup fresh milk are thoroughly mixed in an electric mixer for about 30 seconds, or until smooth, creamy and delicious.

By Mrs. Arnold Perlick, Route 1, Box 3, Suring, Wisconsin.

Pineapple Shake

Put ¼ cup powdered skim milk and 1 teaspoon honey into a large glass of unsweetened pineapple juice. Beat until frothy. For better nourishment also add 1 teaspoon powdered brewers yeast and increase to 1 heaping tablespoon as you become accustomed to the flavor. Also try this combination with grape juice, loganberry juice, apricot juice, apple juice (canned or frozen).

By Mrs. Arnold Perlick, Rt. 1, Box 3, Suring, Wisconsin.

(Recipes from Gaylord Hauser's "Look Younger, Live Longer," book.)

A Nice Dressing

To serve with a fresh fruit salad (goes well with canned fruits too) is made from Cottage Cheese. To a package of cottage cheese add ¼ cup finely chopped cocoanut, 2 tablespoons honey and 3 tablespoons mayonnaise.

By Mrs. Arnold Perlick, Route 1, Box 3, Suring, Wisconsin.
Taken from—
Successful Farming Magazine

Lemon Honey Fruit Salad Dressing
(Makes 1 cup)

½ cup salad oil
¼ cup lemon juice
2 tablespoons honey
1 teaspoon salt

Blend all ingredients thoroughly.

Florida Dressing

Mix very ripe avocados or put in electric mixer. When smooth use 1 cup avocado pulp and mix in ¼ cup lemon juice, 1 teaspoon iodized vegetable salt, 1 teaspoon honey and if you like, a dash of garlic. Blend well and serve with fruit salads.

Sunshine Salad

Chop 2 small carrots, 2 small beets, ¼ cup cabbage, 2 stalks celery. Serve with dressing of 4 tablespoons fat free Yogurt, ¼ teaspoon honey, ½ teaspoon lemon juice and a tablespoon grated lemon rind.

Sent in by Mrs. Arnold Perlick, Route 1, Box 3, Suring, Wisconsin

(Taken from Gaylord Hauser's "Look Younger, Live Longer," book.)

Meetings and Events

New Hampshire Association
Westmoreland, Sept. 10th

The New Hampshire Association will hold its next meeting on September 10th at Cameron Paine's, one and a half miles west off Route 63 in Westmoreland. Seasonal subjects will be discussed. Anyone interested in beekeeping is welcome. Membership dues of $2.00 for the family unit are acceptable at all times, payable to Barbara Prior, Secretary-Treasurer, Westminister, Vermont.
Barbara Prior
Sec.

Middlesex County (Mass.)
Woburn, September 24th

The last outdoor meeting of the Middlesex Association will be at 2:00 p.m. at the home of Douglas Brown, 620 Main St., in Woburn. To climax the summer's activity name of the winner of the club hive will be drawn and numerous other prizes will be awarded. Fall management practices will be discussed. A picnic supper will be enjoyed by everyone with coffee and ice cream furnished by the club.
Betty Carlson
Corres. Sec.

Midwestern Association
Kansas City, September 11th

The Midwestern Association will hold its regular monthly meeting at the home of Mr. and Mrs. Walter J. Hill, 8440 Jarboe, Kansas City, Missouri, Sunday, September 11th at 2:30 p.m. There will be a speaker on the subject of Packaging and Marketing. Refreshments will be served. Everyone welcome.
James A. Worrel
Secretary

Northeastern Kansas Association
Kansas City, Kansas, September 4th

The Northeastern Kansas Association cordially invites all members and any others interested in bee culture or pollination services to meet with us Sunday P.M. September 4th, at the home of Mr. & Mrs. R. F. Ferguson, 4126 Francis St., Kansas City, Kansas.

A dinner will be served at 1 P.M. after which Mr. Robert W. Meloy, Research Division, of the Sioux Honey Company will speak on research work at this institution, during the business session, which begins at 2:30 P.M.

To reach the above address, proceed southward on 7th Street, K. C. Ks. or Hwy 69 from the main business district, about four miles. Pass the Kansas University Hospital, turn left 1 block, then the 6th house south on west side of street.
R. F. Ferguson
Editor

Mrs. A. J. Smith

Cook DuPage Association lost one of its most active members with the death of Mrs. A. J. Smith. She and her husband were both members for many years of this outstandingly successful association.

Mrs. Smith (Elizabeth Curtin) was born in Frederickton, Canada. Her husband, A. J., her son Francis and 8 grandchildren survive.

She was hostess of the Cook Dupage Association, retiring from that office, last February. She was then presented with a gold watch for her 19 years of service. She was a faithful, hard working, nontiring member of the association and always gave her services with a smile. Everyone knows her husband, A. J., and he has also always been a go-getter in the association. Mrs. Smith died on Sunday, July 17th. Funeral was at Blue Island and the pallbearers were all beekeepers and members of the Association.
Ralph O. Klebs
St. Charles, Ill.

South Dakota Association
Brookings, October 14-15

The South Dakota Association will hold its annual meeting October 14th and 15 on the South Dakota State College campus at Brookings. The annual banquet will be the evening of the 14th in the Student Union Building.
R. J. Walstrom
Brookings

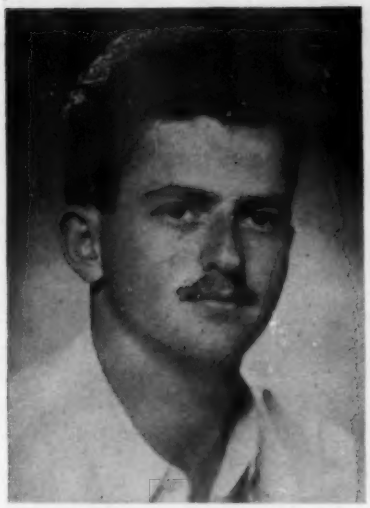
Chattanooga Association to be Host to Southern Federation
Mid-November

The Chattanooga Area Association will be host to the Southern States Federation in mid-November this year. We invite beekeepers everywhere to come south and be with us. Real southern hospitality will prevail.
Carl M. Teasley
Secretary

Alfred George and Audrey Marie Engelhardt

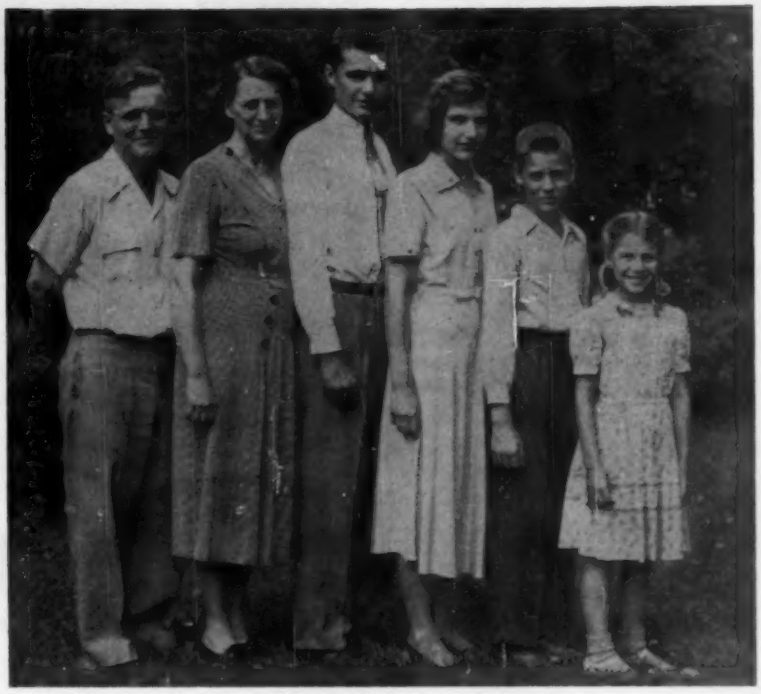
Some of our readers may remember the story in May about the 1800 colony outfit of Paul Engelhardt of Antwerp, New York. His daughter, Gloria Ann, was Empire State Honey Queen for 1956-1958.

Mr. and Mrs. Engelhardt have just written us about a tragic auto accident that took the life of their son, Alfred George, age 21, and his wife, Audrey Marie Lake, age 19. The couple left two children, Julie Ann, 11 months and Deborah Leigh, 2½ years. Our deep sympathy to Claire and Paul in their loss.



Micha Kellner Seeks Position

Micha is the son of Dr. Ernest Kellner, dental surgeon, Balfour Street, Haifa 3, Israel. Dr. Kellner wrote about Micha in January telling us that Micha wanted to secure more knowledge and experience in beekeeping in this country. Micha is 23 and has been keeping bees since he was a youngster. His government has used his services in queen breeding and royal jelly production. For a time he attended the Hebrew University in Jerusalem but now he wants to learn more about practical beekeeping. He would also like to enter some American school where apiculture is taught. Since Micha could not obtain a visa earlier he is still anxious to make contact here with professional beekeepers or with schools or universities. If you are interested write to ABJ or to Dr. Kellner.



Our Family in Atlantic

Here is an excellent picture of the Pellett family at the Honey Plant Gardens in Atlantic, Iowa - left to right—Melvin, Elizabeth, Norman, Eloise, Harold and Janet. Recently the family was nominated to represent Atlantic in the nationwide "All American Family" search conducted by the Book of Knowledge. Norman, and his wife, Dorothy, both graduated in horticulture at the Iowa State University and came back to help Melvin in the business. Eloise's husband, Ted Pfeiff, teaches in Davenport and Eloise also in a nearby community. Lt. Harold, and his wife Shelby, are in Fort Sill, Oklahoma. He is a graduate from Iowa State University. He expects to do graduate work in turf management. Janet is in high school but plans to attend Iowa State Teachers College at Cedar Falls to major in music. Melvin's father Frank, was known world over for his work with honey plants. He was Field Editor of ABJ.

Eastern Missouri Field Day

The photo at the left shows John Morden at our Field Day, May 22, installing a package of bees in a new hive which was given as a grand attendance prize. The photo at the right is our 1960 Honey Queen, Mrs. Belva Schroeder. The novel event of this field day was a bee race. Ten bees were taken from a colony and each bee was numbered with a numeral on the thorax. Each bee represented a group of ten persons. The bees were released some distance from their hive. The winner of the grand prize was drawn from the group represented by the first bee to return to the hive.

Julius E. Simon
Secretary

Michigan's Ionia Meeting

July 25th found about 300 beekeepers from Michigan, Ohio and Wisconsin buzzing around Ionia, visiting the Seidelman apiaries and honey house and finally settling at the Youth Building at the fair grounds for the program.

Entered in the Queen Contest were Gerry Sousley, Lawrence; Esther Collins, Battle Creek; Donna Eveleth, Livonia, and Kay Farmer, Flint. The queen was selected by audience vote and Donna Eveleth, 17 year old daughter of Mr. and Mrs. Donald Eveleth, Livonia, will represent the honey industry of Michigan for 1961. She will appear at functions throughout the state and fill represent Michigan in the National Contest in Omaha in February.

Mr. and Mrs. Floyd Markham, Ypsilanti, won the honorary title of Mrs. Honey Bee and Mr. Lazy Drone, voted for one couple each year for outstanding contribution made to the industry. These officers and alternates were elected; for President, Kenneth Farmer, Flint, and Frank Hrushka, Traverse City; Secretary Margaret Seidelman, Ionia and Lee Van Allen, Caro.

Bobby Damron, 4-H Winner

Garnett Puett, manager of the Dadant Branch, Hahira, Georgia, presents Bobby Damron, Gainesville, a $100.00 scholarship in the Senior Class of 4-H Club apiary projects at the Florida State Beekeepers Meeting in Tampa.

Junior awards in 4-H Club beekeeping for first, second and third places were made to Michael Fields, Bushnell; Bill Peeples, Sebring; and Ray McCormick, Jacksonville, by Kilgore Seed Company, Plant City, Florida.

Reported by
John Haynie
Extension Apiculturist
Gainesville, Florida

The Federation

Secretary Joseph O. Moffett
115 So. College Ave., Fort Collins, Colorado

Plan now to attend Omaha convention. Henry Hansen, Charlie Moosman, and many others are working hard to make the 1961 convention the best yet. If possible, plan to attend this convention at the Hotel Paxton in Omaha, Nebraska. The dates are January 30-February 4.

Must obtain 250 more in insurance plan. Because of the high average age in the group insurance plan, the Ohio National Life Insurance Company has said 250 more must come into the plan before May 1, 1961. If they do, the rates and insurance for those signing before May 1, 1960 will be extended without change to May 1, 1962. Otherwise the insurance contract will have to be renegotiated effective May 1, 1961. Any beekeeper under 55 can apply for this group insurance now.

Second claim paid. A second claim of $2,500 has been paid to August Smith of Illinois. A third claim is being processed.

Food & Drug seized 3,000 cans of honey. The packer who advertised Dr. Jarvis' book has had 3,000 cans of honey tied up by Food & Drug officials.

This extreme action shows what steps these officials can apparently take.

Honey Queen tours Minnesota, North Dakota, and Iowa. Monicca McNutt, the 1960 Honey Queen from Nashville, Tennessee, was to leave July 26 to tour the northern states of Minnesota, North Dakota, and Iowa. She is scheduled to return home August 5. The queen also plans to attend the National Honey Show at Detroit in September.

Membership over 700. To date we have over 700 beekeepers who have paid their 1960 dues. Join your fellow beekeeper in the Federation and advance the bee industry. Help us reach the biggest membership the Federation has ever had. Minimum dues are $3.00 with a suggested payment of 4c a colony for beekeepers having over 75 colonies.

Sense & Nonsense

The great subject of the day for the American people is the exposed condition of our great seaports in a dozen of which one-fourth of the wealth and resources of the whole nation is accumulated. Destruction of a great port would spread ruin to all parts of the country. Joseph Nimmo, Jr., in his article, "Our Unprotected Seacoast," gives a lesson that all should read in Frank Leslie's Popuar Monthly for March.

March 1887

A hive is a box or house where a colony of bees reside; the stand is the place where the hive is located; the family of bees is, when organized, a colony; the bees leaving the colony with a queen to form increase, is a swarm.

October 1887

"How do you pronounce s-t-i-n-g-y?" asked Prof. Comstock. The smart boy nearest the foot of the class stood up and said, "It depends a great deal whether the word is applied to a man or a bee; one is sting-y, and the other is stin-gy. "Go to the head, young fellow."

November 1887

Honeymoon, it is said, is a term of Teutonic origin, and derived from a luxurious drink prepared with honey by the ancients. It was the custom to drink diluted honey for thirty days, or a moon's age, after a wedding feast. It is good to "keep sweet" for a month after marriage, but it is better when that "sweetness" extends throughout not only the months, but the long years of wedded life.

April 1890

The Bee-Question—"To bee or not to bee"—is discussed quite forcibly in the following conversation, which shows the advantage to be derived from keeping on right side, or end, of anything—even though it is only a bee:

Breslow— Say, Cummings, don't you want to buy a hive of bees?

Cummings—Not I. Tried 'em a year, and was stung just 647 times.

Breslow—They must have been cross. You didn't get on the right side of 'em.

Cummings—Great Scott! I did, too. I was extra careful about that, but I always seemed to strike the wrong end.

May 1890

Among the Telegraphic News in the daily papers, late Friday, we found the following item, in the list of corporations licensed at Springfield, on Feb. 27, 1891, to commence business under the laws of the State of Illinois.

The Illinois State Bekeepers' Association at Springfield; to promote bee culture; without capital stock; incorporators, P. J. England, J. A. Stone and A. N. Draper.

We drew up the incorporation papers before leaving the convention hall, and this shows that the incorporators attended to the business; and the State Association is now born, and fully recognized by law.

March 1891

Foulbrood and Movable Frame Hives

Dr. Tinker's article, on page 314, and W. P. Faylor's, on page 346, regarding the origin of foulbrood, are quite correct. I have been consulting some old books, in search of information on this point, but so far, I have found nothing concerning foulbrood, and I have concluded that the disease had its origin, or first made its appearance, at the time of the introduction of the movable frame hive, about 1853. It is caused by spacing brood frames, and single walled hives, combined with ignorance and thoughtlessness on the part of the beekeeper who knows nothing of the habits or requirements of the honey bee. E. L. Pratt cures by cremation—that is right, but why not go further, and spray the brain of the thoughtless beekeeper with a solution of muriate of potash. J.W. Tefft
Bufflao, N Y

April 1891

QUEENS
CAUCASIAN or ITALIAN
Bred for production and gentleness
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L. C. ANTLES
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FRUIT POLLENS and POLLEN GOLD
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BETTER BRED QUEENS
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QUALITY ITALIAN QUEENS
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AFTER MAY 15
Service and Satisfaction
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BEES and QUEENS
Spring queens until May 5

	Italian	Starline
1 - 10	$1.50	$1.80
10 - 25	1.35	1.65
25 or more	1.20	1.50
After May 5		
Less than 25	1.10	1.40
25 or more	1.00	1.30

Place your order with us and be assured of top quality queens and prompt, courteous service.
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Norman's Italian Queens
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Untested Queens 1-25—75c ea.; 26 and up—65c ea.; Tested Queens—$1.50 each.
NORMAN BEE CO.
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JENSEN reared queens are GOOD. No "foolin." Queens available now are, we believe, the finest we've ever produced. They are unusually large, beautifully proportioned and we have every reason to believe will give you a good account of themselves in your colonies. High production, gentleness, hardiness and adaptability to varied climatic conditions are inherent qualities that do not just happen. It always pays to buy the best.

Dadant Starline Hybrids
1 - 25—$1.30 25 to 99—$1.20
100 up—$1.00

Jensen's Magnolia State
1 - 25—$1.00 25 to 99—90c
100 up—80c

Clipped and Marked for only 10c each additional

JENSEN'S APIARIES
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Your Best Small Extractor Buy

This is a heavy duty small extractor with a heavy galvanized steel tank, extra strong reel that holds 4 combs. The same heavy duty cast iron gears used on reversible extractors — a machine that weighs 55 pounds net. Cat. No. 208. KELLEY'S FRAME NON-REVERSIBLE EXTRACTOR. Ship. Wt. 90 lbs. Each $38.00

The

Walter T. Kelley Co.
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QUEENS . . . "Gulf Breeze" . . . ITALIANS

When in need of either a large number, or just a few queens—Remember the reliable "GULF BREEZE" Stock.

Prices: 1 - 9—90c 10 - 49—85c and for 50 up—80c each

Clip 5c and mark 5c each.

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FOLK MEDICINE

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CONTAINS 20 PAGES ON HONEY & CAPPINGS

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SPECIAL ON QUEENS

ITALIANS OR CAUCASIANS

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In lots of— 1 - 24 ... 75c each; 25 - 499 ... 70c each

Tested Queens $1.50 each

Airmailed-clipped-No extra charge-Marked 15c extra

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PACKAGE BEES & QUEENS and ROYAL JELLY
Write For Prices

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Caucasian Packages and Queens for 1961

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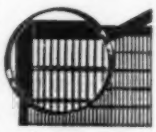
Citrus Hgts. Calif.

Chrysler's Electric Welded All-Steel Queen Excluder



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- Accurate spacing
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- No wood. No Burr combs
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- So durably made that it is permanently queen excluding and will last a life time.

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1 to 25 ..... 75c each
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1 - 24	$1.40
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Add 10c per queen if you wish the queens marked and/or clipped

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$1.29 plus freight at your dealer's

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Most honey packers and dealers participate in the Check-Off Plan. When you sell your honey insist that the buyer provide you with "Producer Stamps" and "Dealer Stamps." This is your receipt for your contribution at the rate of 2c per 60 pound can and evidence that the buyer has paid an equal amount. Thus, 4c per 60 pound can will be raised and those little cents soon add up to powerful dollars which the Honey Industry Council will put to work where they will do the most good.

Your honey must compete for store shelf space with 6,000 other food items, most of them well advertised. If you really want better prices for your honey you can help get them by insisting that your buyer use the Check-Off Plan. *You* as a honey producer must do this if *you* want better prices.

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ITALIAN QUEENS jumbo size $1.20, dozen $12.00. Sheppard Apiaries, Aberdeen, North Carolina.

QUALITY ITALIAN Queens-Each $1.00; 5 or more 90c each; 25 or more 85c each. A. G. Woodman Co., Grand Rapids, Michigan or Lena, South Carolina.

Dadant Starline Hybrid queens, balance of season. 1 to 24 $1.30 each, 25-99 $1.15 each, 100 up $1.00 each. Our own strain Italian queens, 1 to 24 90 cents, larger lots, 75 cents. All queens sent prepaid, and air mailed when it saves time. Clip and marked 10 cents each extra. Health certificate and satisfaction, personal service. S. J. Head, Crossett, Arkansas. WHERE YOUR BUSINESS IS APPRECIATED.

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COMPLETE STOCK of Honey containers: glass jars, 5 lb. & 10 lb. tin pails, 5 gal. 3" opening honey containers, new and used drums. Hubbard Apiaries, Onsted, Michigan.

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FOR SALE: 100 2-story colonies of bees. Allen R. Flink, Streator, Illinois.

Copy for the department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rate of Classified advertising — 16 cents for each word, letter, figure or initial, including the name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on comb must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

DUE TO my son's tragic accident, selling 100—8 frame hives bees two story $8.00 each. 500 10 frame hives bees two story $10.00 each. This fall's prices only. Plenty of stores. Paul Engelhardt, Antwerp, New York.

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550 ten-frame, two-story colonies with all deep extracting supers. Bees requeened and strong, and both bees and equipment in good condition. Wilbur Ellsworth, Tarkio, Missouri.

FOR SALE: Complete bee business, modern extracting equipment, 160 two-story colonies, 500 shallow extracting supers, pick-up truck. John Schaefer, New Lebanon, New York.

FOR SALE: Half our bees. 3,000 one story 10 frame colonies no A.F.B. Good condition. Honey for winter. F.O.B. central California, $6.50 each in lots of 500 or more. Art Harrison, Box 602, Los Banos, California.

25 STRONG 10-frame 2 story colonies of bees. All requeened in July. Hives painted white. Plenty of honey. Forty deep supers with drawn combs. Alfred Stutt, Route 1, Creston, Iowa.

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1 30-frame extractor, 1 pump 1¼ pipe size, 1 uncapping power, 1 wax melter junior size, all Woodman make, ½ price of new. A. Gough, 150 Ann St., N.E., Grand Rapids, Michigan.

SUGAR for fall feeding. Best quality cane, guaranteed. Special price to beekeepers. Eugene McClain, 12491 Lacey, Hanford, California.

FOR SALE: One hundred colonies, two story, ten frame, heavy with honey, headed by Starline queens, some eight frame equipment (cheap). Walter Guntren, Storm Lake, Iowa.

60 10-frame hives with drawn combs, 160 supers, bottom boards and covers. W. H. Rosemore, 1101-1st Ave. N., Jamestown, North Dakota.

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Improved designs, embodying color balance, simplicity, and distinction. Please send for free samples & prices

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FOR SALE: Beeway sections complete with fittings also one small extractor. Heywood's Apiaries, Route 3, Council Bluffs, Iowa.

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WHITE CLOVER HONEY in sixties. Ralph Gamber, 910 State, Lancaster, Pa.

WE CAN SUPPLY NICE white honey. Immediate delivery. Russell Smalley. Beaver, Iowa.

NEW FLORIDA TWIN PACK. Two three-pound cans of your choice. Orange Blossom, Tupelo, Gallberry, or Palmetto $3.00 postpaid. Phillips Honey Co., P. O. Box 1506, Clearwater, Fla.

MICHIGAN'S FINEST WHITE CLOVER HONEY. New Sixties. Fully ripened. Sample 25c. John McColl, Tecumseh, Michigan.

HONEY and BEESWAX WANTED

WANTED—extra white, white and light amber honey in 60 lb. cans. Cloverdale Honey Co., Fredonia, New York.

WANTED—Extra white and light amber honey. Let us ship you the containers. Sell us your honey for CASH on delivery. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Mich.

HONEY AND Beeswax wanted. Melford Olson Honey Co., 5201 Douglas Drive, Minneapolis 22, Minnesota.

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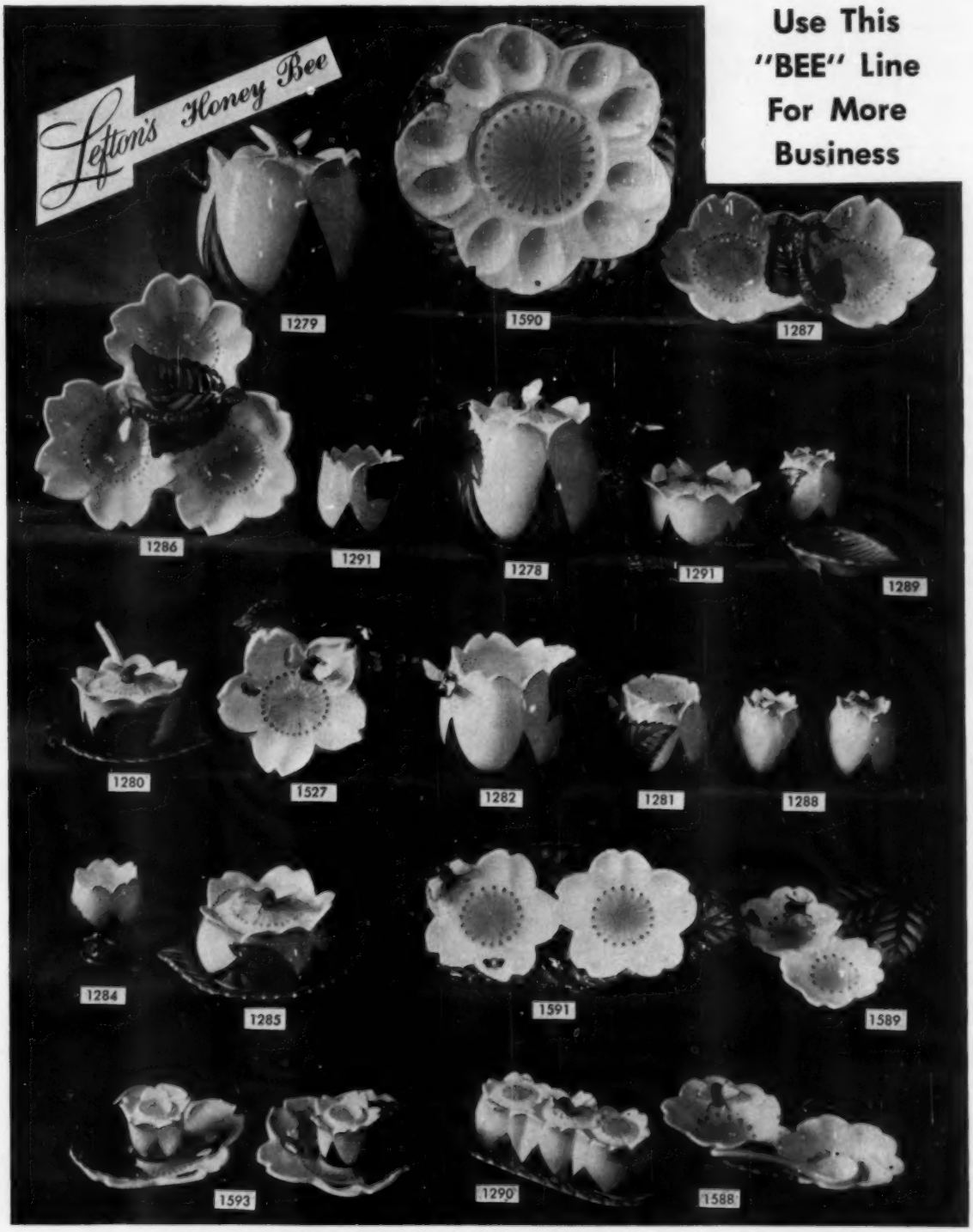

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Crop and Market

by M. G. Dadant

The Crop Itself

A pretty good idea of the crop can be garnered at the time this is being written on August 18. It does not seem to the writer that we can even equal the crop of last year, much less have an extraordinary crop.

In many states, although conditions seem to be good, they are very irregular. The northeast sections we can guess are barely as much as last year if not much less although some New York and Massachusetts areas are reporting more. Virginia may be about normal and Georgia some 25% above last year with Florida even better than that. The rest of the east coast, however, and the Southeast seem under a year ago. Kentucky and Tennessee are about the equal of a year ago and Mississippi will run perhaps above a year ago with Louisiana perhaps the outstanding of all of the crop areas with some 200 to 300 per cent of the 1959 crop. Ranging from Pennsylvania through Ohio, Indiana and into Illinois, Iowa and Missouri with unusual prospects earlier, the final results would lead one to believe that the crop will not perhaps be over 75 per cent of 1959 and in many areas much less than this. Arkansas may come up to a year ago although drought in the northeast areas may hurt the soybean and other later crops badly. Michigan and Wisconsin we may perhaps guess as much as last year although not more and Minnesota possibly as much as last year although some of the western areas seem to be extremely good. South Dakota which reported almost discouraging conditions a while back, seems to have improved somewhat but with Nebraska, will be much under a year ago whereas Kansas and Oklahoma appear to be considerably above. In Montana the reports do not warrant expecting as much honey as last year nor can we expect the same either of Wyoming or Colorado. Texas is perhaps equal to last year.

The intermountain area generally may be equal to 1959 but that takes into consideration that the Utah crop a year ago, as well as Nevada, was quite mediocre and seems to be better this year.

As we all recognize, California must have a larger crop than last year which was a near failure but earlier prospects were doomed on account of the extreme drought and the volume of honey coming out of California apiaries will not be such as to seriously jeopardize the markets as was the case in 1959. Oregon and Washington both seem to be about normal while Arizona and New Mexico would be below normal. Idaho also appears somewhere near normal conditions.

In Canada the eastern provinces are much below last year and evidently will have an opportunity to clear up some of the surplus crop carried over. In the prairie provinces, paticularly in Manitoba, conditions seem to be improved over a year ago but in British Columbia they are somewhat less than in 1959.

Prospects for the Balance of Season

Generally the prospects do appear good on account of the fact that rainfall throughout the East and Central West particularly has been such as to encourage the late planting of corn and the rapid growth of heartsease and Spanish needle for fall. In other sections late alfalfa conditions are not any better than a year ago and particularly in western and southern Colorado they are much below. It is dry in North Dakota, dry in northern Arkansas, dry in Montana and conditions relatively poor throughout the intermountain area and farther west.

Offers

So far offers have not "clicked" to any great extent but the tendency has been to maintain a market above that which was offered at the same time last year, particularly on white honey which we believe is going to be relatively scarce by the time the Christmas season is over. We have heard of some actual sales at 14½ cents in central areas, and as low as 12½ in Georgia with 13 in Texas.

However, this can be no measure of what the purchases are inasmuch as the packers evidently had a fairly good carryover in spite of practically no carryover of white honey in the hands of producers.

Prices Which Should Obtain

All in all I think the Minnesota crop committee recommendations are quite reasonable suggesting a base price or a floor price of 14 cents on good white honey f.o.b. beekeepers' warehouse and cans returned if desired.

In the East we have suggestions of a base price of more near 16 cents and in the Southeast somewhat under the 14 cent price.

In the Central West, suggestions are that the price should be at least 15 cents and we heartily agree. This applies as well to the northern areas.

We learn of much Montana honey already being sold at 14½ cents with a tendency towards an advance over this. While it is true that some California honey in the white grades may stand at 13½ to 14, orange still is bringing 16 cents.

The amber grades are in less demand but there seems to be a definite stiffening here also with a suggestion of somewhere around 10 cents in the East and South to as high as 11 and 12 cents in the Central West.

All in all we look for probably a 5% shorter crop than last year, partly because of weather conditions and partly because there are some 2% less bees to gather the honey than there were in 1959 and their start was unusually late.

We cannot close without mentioning and commending the report of the Minnesota crop committee which reported at Detroit Lakes at their summer meeting. Mr. Glen McCoy and his committee did an outstanding job and are recommending prices somewhat in line with the above to their members. It is to be hoped that within the space of a few years there may be an interlocking board in other states which can cooperate in the same manner once or twice a year to furnish information to members of various associations.

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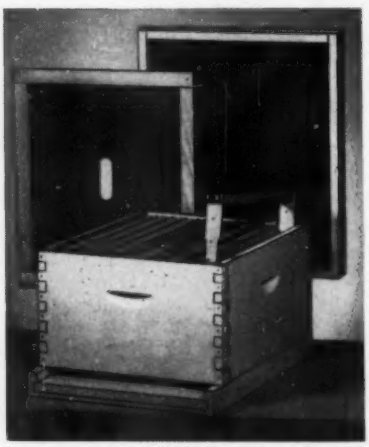

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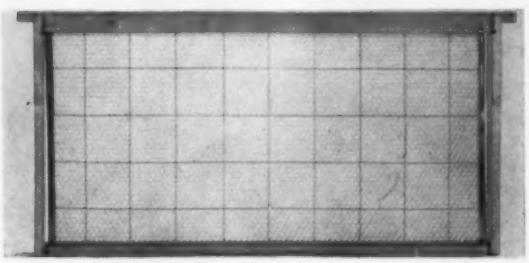

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